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Original Contributions.

SUGGESTIONS ON CROWN WORK.

By H. W. Allwine, D.D.S., Omaha, Neb.

To make sharp, well-formed cusps by the Hollingsworth system, make the counter-die as directed. Smoke this, place it into the rubber ring and pour upon it Melotte's metal, nearly cold. Scrape from the die about the thickness of the gold to be swaged. Anneal the gold, partly swage, anneal again and drive home.

If the Hollingsworth cusps be not at hand, select a tooth having the size and cusps wanted. Imbed it in sand or any investment, exposing the cusps as desired. Place a ring about an inch in diameter, made of brass or any other metal, around this, and pour into the ring, over the cusps, some of Melotte's metal. This will give a counter-die. Make the die as directed above.

The die may be made first by taking an impression of the cusps in plaster and pouring the metal, quite cool, upon this, when the plaster has become hard and dry.

The metal should always be poured when it is just hot enough to flow.

To make an all gold bicuspid or molar crown, I proceed as follows: Prepare the side of the crown so a wire measure at the neck may be removed without breaking the wire. Then take a plaster impression of the tooth. Place around this a metal ring. Fill the impression of all the teeth, except the one wanted, with plaster. From the tooth wanted bevel the plaster to the upper edge of the ring. When this plaster is hard and dry, pour into it Melotte's metal. Now cut away the metal well up the side of the tooth, representing the cervical margin of the gum, so the band will pass well

up. Dress the side of the crown so that the wire measure will pass over the metal tooth as it did over the natural one. This wire measure, cut and straightened, is the length of the gold required for the band. Fit the band down well all around and leave it long enough to extend just over the turn of the grinding surface. Scrape from the grinding surface of the metal tooth the thickness of the gold wanted here. Hammer and burnish the edge well down to the metal tooth and file it to a sharp edge. Now contour as desired. Place the band back on the metal tooth and, with hammer and soft wood, drive a piece of well annealed gold to a perfect fit over the cusps and end of the band. Solder and dress down.

Any broken off molar or bicuspid may be thus capped if it be first built up with cement.

ANESTHETICS IN THE CHAIR.

By W. R. Clack, Clear Lake, Iowa. Read Before the Northern Iowa Dental Society, at Spirit Lake, August 11-13, 1896.

From the earliest ages mankind has been seeking means of relief from pain. At the siege of Troy the Grecian surgeons sought to mitigate the suffering of the wounded by applying alcohol and carbolic acid to their wounds.

It is said that the ancient Assyrians compressed the veins of the neck to relieve the pain of circumcision. The Chinese, even in remote ages, had learned the anesthetic properties of a plant which was undoubtedly the Indian hemp. They used the drug for the purpose of blunting the sensibility of patients who were subjected to the operation of acupuncture.

A drug called Mandragora was also known by the ancients. It would produce insensibility and loss of consciousness for several hours. For anesthetic purposes it was infused in wine and was used by surgeons at the commencement of the Christian era.

The "wine mingled with myrrh," spoken of in Mark 15, xxiii, offered by the kind-hearted Jewish women to Jesus on the cross, was unquestionably this same Mandragora wine, for it was the custom to give this pain-defying mixture to those who were undergoing the pains of crucifixion. It is said that Jesus refused to partake of this means of alleviating his sufferings, lest he might be charged with trying to escape the Divine will. I have personally met this

same superstition in people who believed it to be contrary to Divine will for a woman to try to escape the pains of child-birth by the use of anesthetics.

A curious passage in an old volume on natural magic, composed by Jean-Baptiste Pesta, describes the preparation and administration of certain volatile substances, of which the effects appear to have closely resembled the effects of ether.

Experiments have been made from time to time with various drugs with varying degrees of success until we have the positive anesthetic agents of the day. By their use pain can be almost wholly eradicated from surgical operations.

The earlier authorities on anesthesia believed that insensibility was produced by a mechanical pressure of the blood on the brain, but more modern research shows this to be false, as ether, chloroform and like substances do not exist in a vaporous condition within the body. They are dissolved in the blood and exert no more pressure than is exerted by the current of the blood itself. This pressure may even be dimished as the phenomena of anesthesia are intensified.

Other observers have advanced the idea that the anesthetic state is really a condition of asphyxia. But the chemical composition of the blood is not changed during the anesthesia in any way that would be consistent with such an hypothesis; the blood does not even exhibit the blackness that is so characteristic of asphyxia.

There can be no doubt as to the duty of the dentist to use some agent to mitigate the pain of extracting. There is no pain from which humanity shrinks as it does from this. I have been told frequently by patients who had had experience in both matters that they would rather undergo the pain of confinement than of extracting. From youth to old age it is the same; in fact I believe the more times one faces the ordeal the worse he dreads it. The question is, which of the agents shall the dentist use?

While statistics show the larger number of deaths to have occurred from the use of chloroform, I still believe that for protracted operations it is the best, as it is more positive in its action, less exciting and less liable to cause nausea. Out of 492,235 inhalations of chloroform we find eighty-four deaths, or one in 5,860, but it must be remembered that the conditions under which it was used were less favorable than in the dental chair.

Chisholm states that during the twenty-eight years from the time of the introduction of chloroform there were only two deaths by its use in the Royal Infirmary at Edinburgh. During the last ten years of that period he estimates that there were 36,500 cases of chloroform anesthesia, with only one death. Elser, of Strasburg, had used chloroform 16,500 times without a single death. During the Crimean war chloroform was given 30,000 times, with but two recorded deaths. When it is remembered that in many of these cases it was given to men torn and mangled by shot and shell, and too often by unskillful assistants, we must hold this agent in high esteem. Ether, according to the same table, shows six deaths in 99,255 inhalations, or one in 16,542, but it is so slow to act and excites the patient so much, produces so much nausea and leaves the patient in such a deathlike stupor for so long that it is not a pleasant agent to use in the chair.

Although the mixture known as "A. C. E." is highly recommended by some authorities, within my observation it has not proven a success. It is in my opinion an unscientific preparation, from the fact that ether is so much more readily evaporated than either of the other agents that the administrator is ignorant of the nature and strength of the mixture he is giving. If it could be thoroughly vaporized before administering it would be a safer agent.

As to the various local anesthetic preparations on the market, in which cocain is the active principle, more or less use of them for ten years has not inclined my heart toward them, and the views of a prominent physician, than whom there is no better posted man on antiseptic surgery in the state, cover the ground so fully that I quote them in full:

"You ask me for my opinion of local anesthesia by hypodermic injection into the gums for extracting. In the briefest manner possible I would say that in my judgment, from both a practical and theoretical standpoint, it is unsurgical and unsafe, attended indeed with grave danger. There have come under my observation and treatment a large number of cases in the last few years where this method has resulted in ulceration, sloughing and even caries and necrosis of the bony structure of the maxilla. It is my belief that no amount of care as to cleanliness and antiseptic precaution will obviate these dangers, for the reason that in extracting you open up the cells and canals of the bone, in a locality highly endowed with

blood vessels and nerves, and infection is very much more liable to occur under such circumstances than where an injection of morphine, cocain, or other substance is made into the soft parts with unbroken vessel walls. These dangers, in connection with the danger of toxic effect, make it in my mind a more dangerous drug to use than chloroform."

Since in 1844 Horace Wells had the first tooth extracted under the influence of nitrous oxid gas, no agent has been discovered which so fully fills the long-felt want. Twenty years' use of it has convinced me of its superiority over all other anesthetics for minor surgery. It is quickly administered, is easily taken, does not have the irritating effect on the throat that chloroform or ether has, produces no nausea, and is so safe that Lyman has found only eight cases of death under its influence, and the evidence in these cases does not by any means substantiate the claim that the deaths were due directly to the effects of the gas. In one case he says of the patient: "He was in the last stages of consumption and death was ascribed to that cause." In another he says: "She did not take enough to produce insensibility, but was taken ill on the next day and died on the following. Her death was attributed to the inhalation, but there was no evidence to substantiate such an opinion." Another was caused by asphyxia from a cork that was used to keep the jaws open becoming lodged in the pharynx. For twenty years I have given it to all ages of patients, from the child to a lady 83 years old. I have given it to persons in robust health and to some so ill that I was obliged to administer it to them in their beds. I have found a few persons that I could not reduce to complete anesthesia, and two who became so excited after a half-dozen breaths that they screamed and would kick and fight like demons. On withdrawing the inhaler they both inquired why I had not continued and taken the teeth out, insisting that they had not made a loud noise. A second trial gave the same result, so the effort was abandoned.

I have never had any bad results follow its use but once, and I leave it with you to decide if the gas was responsible for that. I have given it to married ladies in all stages of delicate health and never had any ill effects but in this case. One day, about seven years ago, a lady came to me saying that she had come to town to have a tooth out but was so nervous that she could not have it drawn

without taking something. She thought she was within six weeks of confinement. She took the gas very nicely, did not feel any pain, and went on her way rejoicing. About six weeks afterward her physician told me that he had just delivered Mrs. Blank of a dead fœtus not entirely developed, and that the lady told him that she had not felt any motion since she took gas to have that tooth out the time the team ran away while going to town and threw her out.

For another reason I believe gas to be the safest anesthetic for the dentist to use. No jury in the land, after once seeing gas administered, would believe it possible for the dentist to take any improper liberties with his patients while they were under the influence, and the same cannot be said of the stronger anesthetics. While the latter may have been used for improper purposes, I believe that many a man has been charged with taking liberties with his patients when he was innocent, but I believe it to be impossible for any such thing to occur during a gas administration.

Although it is not imperative that the dentist have an assistant present, it is better for him to do so, but I have had many cases where the patient would not permit any other person to be in the room, and I have never felt the slightest fear that my acts would be misconstrued.

I frequently use gas when I want to "go after" a nerve, and for lancing felons, carbuncles, reducing dislocations and removing ingrowing toe-nails there is no anesthetic equal to it. From one and a half to two minutes to give it, and twenty to forty seconds to recover from its effects, is all the time required.

I do not believe that as a class dentists are inferior to our cousins, the physicians, in our ability to learn to handle anesthetics, and there is no reason why we may not learn to use them as skillfully. I find that in my eighteen and a half years in Clear Lake I have administered anesthetics for my own and the patients of others 3,568 times, and though I have much more yet to learn, it does not set very well to have some downy-lipped M. D., on whose diploma the dust of six months has fallen, tuck his thumbs in the armholes of his vest, bulge out his eyes and his chest, and ask in great astonishment, "You don't mean to say that you administer anesthetics without a doctor, do you?"

I do not believe that all men could learn to give anesthetics. There are no doubt some who are too timid—I make a distinction between a

careful man and a timid one; and if you are a careful man, with sufficient nerve to act promptly in case of an emergency, there is no reason why you should not learn to use anesthetics "without a doctor."

And if you conclude to do so remember that the deaths from nitrous oxid gas are less than one in a million, that it is the best anesthetic for minor surgery, that there is no reaction following its inhalation, and that when gas is pure it has no more taste or unpleasant odor than common air. You can express it all in these few words—it is safe and effective.

PRESIDENT'S ADDRESS.

By Dr. E. D. Brower, Le Mars, Iowa. Read Before the Northern Iowa Dental Society, at Spirit Lake, August 11-13, 1896.

Members of the Northern Iowa Dental Society: We are here assembled for the second meeting of this Society, organized at Clear Lake, September 2, 1895. The object—mutual benefit of the dentists of Northern Iowa. To reach a greater number of men and interest them in society work. To oppose nothing, but rather to advance the interest in our state society.

The members of the state society will all agree with me that there is far too small a per cent of the dentists of Iowa members of that body. The question arises, How are we to increase that membership? Create an interest in society work by the organization of local societies. Show the young men that they are benefited by society work.

The dentists of Northern Iowa are principally young men located in small towns and having little association with other dentists. We may read journals, but we must meet each other and discuss the various branches of dentistry in order to keep abreast of our profession.

Now, as to the line of work that we should pursue. What will be of the most interest to our members? What line of work will our membership be able to handle best? We go to the American, our national society, the work is scientific. There are a few men who are leaders of our profession that do this work. Our state society should give us a mixture of the scientific and practical. Here we have a greater number that can enter into the work. In our little Northern, made up principally of country dentists, and most of us

young men needing to be brushed up on our practical every-day work, our principal opportunities to meet brother dentists to talk over our life-work are at society meetings, so here our principal work will be discussions and clinics on our every-day work.

Take, for example, that neglected piece of work, cleaning teeth. How many of you think that you can clean teeth? Every one. How many can? Very few. How many of the few do the work the best they know how? Not one-half. Why? Because they do not rub up against their fellow practitioners freely—not in the unpleasant competition of the tradesmen, as so many class themselves, but in friendly discussion.

Another thing to which I wish to call attention. I find in my visits to societies the following: A man reads a paper, or he gives a clinic; we hear on all sides, "That is nothing new, I do it myself." Well, what of it? You should be interested to know that someone else says that it is right. Say so yourself in the discussion. If you don't agree, say so right out in the meeting. Don't go to the meeting expecting to hear something new to yourself in everything that is said. Attend every session; listen to every thing that is said, and if you do not hear a thing that is new to you, go home happy to know that you are right in your own practice.

I do a great many things in my every-day work that I want to know from someone else whether I have done right or wrong. It must be a very self-satisfied man that does not. Show me a man who has been located in a small town from five to ten years and has never attended any meetings of his profession, and never visits any of his brother dentists, and I will show you a man who is egotistical, who thinks that he knows it all—a man who is neglecting the little things about his work and consequently doing poorer work each succeeding year. There is one thing to which I wish to call especial attention, and that is the Dental Protective Association. I find that a great many of the younger men in the profession have a wrong idea of the Association, or do not realize the great good that it has done for them. Gentlemen, the Protective Association is saving you from one hundred to two hundred dollars each year. Only three thousand out of seventeen thousand dentists of the United States have paid the expenses. Will you who are not members stand idly by and allow the men who have paid the bills the past ten years to double their subscription to carry on the work?

And now a word for myself and the society. You have given me an unexpected and unearned honor in electing me your second President. I thank you. The other officers and committees have worked hard to make this session a success, although having but little money to work with. I hope none will go home regretting that he came. Let us strive to make this society a power to be felt in the state. We have with us dentists from various parts of the state and from other states.

We welcome you in our midst. Join our society and become one of us. We have no boundary lines.

PAINLESS OPERATIONS.

By Dr. Gustavus North, Springville, Iowa. Read Before the Northern Iowa Dental Society, at Spirit Lake, August 11-13, 1896.

This is a subject which should interest both operator and patient. It is easy for a dentist, when his victim is properly arranged in the operating chair, dammed, clamped and weighted down, to stand by, with foot, motor or electric power, and cut and shape a sensitive cavity, while with a little bur he plays Yandee Doodle upon a sensitive nerve fiber. The patient's eyes bulge out, he stammers, stutters and moans, and with an uplifted hand and a fierce angry look at you he cries, "Stop! Stop!" We stop and inquire, "Did I hurt you?" "Yes, you were cutting right on the nerve; can't you fill my teeth without hurting?" Now, that's the question.

The man who can perform dental operations without pain will be the coming dentist. I have come to this conclusion, that all dental operations can be performed with but little pain, if the dentist be a skillful operator.

Now, gentlemen, don't commence to shake your heads or whisper to your nearest friend that you do not believe this. Do not take advantage of my absence and say anything you will be sorry for. I mean just what I say, that all dental operations should be performed without pain. Children, the most sensitive patients with whom we have to contend, come and go laughing from my office. A child is a bundle of sensitive nerves and should be treated accordingly. We must gain the confidence of our patients—whether they are young or old; and to keep their confidence we must treat them

kindly and honestly. I have no time for a dishonest dentist, one who will advise one thing and practice another.

I will present only a few cases in this short paper, showing how I perform painless operations.

First operation: Deciduous tooth, cavity sensitive. Wipe the cavity dry, then bathe with creasote and again dry the cavity, remove decayed substance with a sharp excavator, cutting from the center toward the border of the cavity, with a lifting instead of a downward movement, and the operation can be performed without pain.

Second operation: Permanent tooth, cavity sensitive, patient in his teens. Apply the rubber dam, dry the cavity with hot air, and bathe with creasote. In a few seconds wipe this out, moisten with alcohol, and again dry with hot air; then remove all foreign substance with a sharp excavator or bur, cutting toward the border of the cavity, with a lifting instead of a pressure movement. After all foreign matter is removed, if the cavity is too sensitive to cut and prepare for a gold filling, use cement for the filling, keeping it well protected from the secretions of the mouth for some time, and this filling will be very durable; then in a few months it can be painlessly refilled with gold.

Third operation: Extracting teeth. Most dentists use anesthetics in their practice, but at dental societies they ignore the whole thing and class it as unprofessional. Class it as you please, teeth can and should be extracted without pain by using a general or local anesthetic. What I term a general anesthetic is ether, chloroform or gas.

Gas is my preference, and I have used it for many years with success. It should be administered as follows: The patient should be seated in a reclining chair, with the clothing properly loosened, and the mouth-prop applied to admit of ample room to operate. The whole operation should be performed with as little demonstration as possible, but the operator should closely watch the respiration, and as soon as the anesthetic stage is reached, which generally requires from 30 to 45 seconds, and is easily observed by the condition of the eye and respiration, all instruments should be in readiness and the operation speedily performed. The time required in administering gas, from the start until the patient fully recovers, is from 2 to 2½ minutes.

I have never had an unfavorable symptom with gas, but I admin-

ister it with great caution. If the patient is in an excited condition, a few minutes' conversation will remove all fear and he will submit without a struggle. When a patient is unruly or difficult to manage it is generally the fault of the operator in not understanding the action of the gas and the temperament of the patient.

I use the following local anesthetic with good results by the aid of a hypodermic syringe:

Cocain hydrochlorat	gr. x
Sulphate atropia	gr. $\frac{1}{20}$
Car. acid crystals.	gr. $2\frac{1}{2}$
Chloral hydrate	gr. $2\frac{1}{2}$
Water	oz. j

The success of a local anesthetic depends greatly on the manipulation of the instrument. The medicine should be injected without pain, and this can be done if proper caution be taken. First wipe the gum dry and then bathe with the preparation; commence by injecting the medicine just under the margin of the gum on each side of the tooth, wait a few seconds, then press the needle a little farther up. At the third, which is usually the last injection, I insert the needle deep into the tissue, and it is painless at this stage of the operation. I generally use from 4 to 6 minims of the drug This preparation can be used with safety, but of course the success will depend greatly on the temperament of the patient. I will now leave the matter with you for discussion.

THE MOUTH-MIRROR.

By Dr. H. B. Tileston, Louisville, Ky. Read at the Twenty-Sixth Annual Meeting of the Kentucky State Dental Association, at Louisville, June 16-18, 1896.

To my mind the mouth-mirror is by far the most useful instrument to be found on the operating table of the dental surgeon. So varied and numerous are its uses that it may be referred to as a veritable *multum in parvo*. Not only is it useful to reflect to the eye of the operator the surface upon which he is working, but it also serves to direct and condense the light upon this surface. It may be employed as a tongue-depressor, a cheek-distender, a mouth-dilator, as an assistant to hold pieces of gold or amalgam while being condensed to place, to hold pellets of absorbent material, and even as a matrix. Or it may often serve in several of these capacities at one time.

For example: When a patient is seated in the chair, my first move is to take the mouth-mirror in my left hand and there it remains, serving in all the capacities above mentioned from time to time. If by any chance it be mislaid, I cannot proceed until it is found and restored to my hand. To me, therefore, it is indeed the most useful of instruments. I do not know whether I find more uses for the mouth-mirror than other operators or not, but there is one method of using it to which every operator should accustom himself, and if I can, by speaking of it here, cause anyone who has not done so before to school himself to so use it, I shall have done something worth the doing.

I refer to the most common of all its uses, that of reflecting the surfaces or points upon which we are operating. In excavating and filling cavities in the superior bicuspids and molars, on the morsal, mesial, distal or palatal surfaces, or upon the palatal, mesial and distal surfaces of the superior anterior teeth, I never see anything but the reflected image of the tooth. And my habit of so operating has saved me many a tired, aching back, and perhaps by this time a permanent deformity in a crooked spine and contracted, diseased chest.

In operating upon the class of cavities just mentioned, the chair should be low and tilted back but slightly, the operator should stand upright at the side of patient's head and to the rear of chair, so as to be entirely free from contact with the body of patient. Holding the mirror in the left hand, the left arm is rested lightly upon the arm-support attached to the side of head-rest, in which posture the glass may be held steadily in any desired position or angle, both reflecting the image of the tooth to the eye and directing the rays of light into the cavity. This position gives the operator the greatest freedom of movement of the right arm and shoulder, which is not the case where the body is bent over to the right to look directly into a cavity in the upper teeth, for then the shoulder and upper arm are so cramped as to be entirely ineffective, and only the wrist is free to move. Then again, in this latter position, the eyes are hampered in their vision, and especially in their power to accurately gauge distances, by being brought into a vertical instead of horizontal position.

When looking into the mouth-mirror at the image of a tooth which is between the eye and the mirror, the apparent distance of the tooth

is increased by the distance between the mirror and the tooth, which enables the operator to obtain a focal distance more agreeable to the eye than the object itself would give. Consequently the eyes endure the strain without exhaustion. A position above and back of the patient also gives the operator escape in a large measure from the poison of foul breaths. Aside from these considerations of greater efficiency and comfort of the operator, it is disgusting to see a man lay himself all over a patient in order to see directly into a cavity in a superior tooth.

Now this instrument being one that is used constantly in the mouth, and in so many mouths, being placed in direct contact with the mucous membrane, often in a diseased condition and bathed in saliva always more or less vitiated, it follows that the mouth-mirror should receive the most careful attention as to its cleanliness and asepsis. Unfortunately, mirrors are so constructed as to afford lodgment for septic material in abundance, and are difficult, because of their construction, to render thoroughly aseptic. The ideal mirror in this respect is yet to appear, and he who brings forth a mouth-mirror fulfilling every requirement of asepsis will confer a great boon upon the dentist and a greater one upon the patient.

An ideal mirror would be a plain disc of some hard metal capable of receiving a high polish that could be renewed by the dentist himself by repolishing as needed. Such a mirror could be boiled in water and rendered aseptic in five minutes. But there is no metal that will receive such a polish as is necessary to reflect an unbroken image and give the depth and perfection of a glass mirror.

The nearest approach to a solution of the problem that I have seen is the mirror made with a screw-ring to hold the glass in the frame. This ring may be taken off, releasing the glass, which, when damaged, may be replaced by a new one. The frame may then be boiled to render it aseptic before another glass is replaced. To avoid the oxidation of the ring-thread by saliva and antiseptic solutions used to disinfect the glass and frame while together, thus making it impossible to remove it, and also to seal up all crevices into which septic matter could penetrate, I adopted the plan of melting paraffin or paraffin wax into the empty frame and over the threads of the screw, and while still fused setting in the glass and screwing down the ring, thus sealing it up effectually against the entrance of anything fluid or solid. The same plan may be fol-

lowed profitably with the ordinary mirror by turning up the edge of the frame, removing the glass and resetting it in a bed of paraffin or cement, and reburnishing the upturned edge of frame back against the glass.

To keep any kind of a mouth-mirror reasonably aseptic I have a small vessel like a watch-crystal or other shallow dish on my operating case constantly filled with electrozone, a solution of chlorides, and a powerful antiseptic. After each patient, and frequently during the sitting of one patient, I dip the glass and such parts of the frame and handle as come in contact with the mouth into this solution and wipe off thoroughly. Before doing so, however, I of course wash off any visible contamination with water. I use the full strength of the solution of electrozone, called dental meditrina. As a further precaution I keep in the drawer of my cabinet, where my mirrors are, a slab of plaster of paris and sand saturated with Formaldehyd, as recommended by Dr. Cassidy a few years ago.

But in spite of all the precautions it is possible to adopt with a glass mirror, such as we are compelled to use for want of anything better, we may still be quite sure that it is *not* thoroughly aseptic at any time. Still it may be rendered at least innocuous by taking the precautions I have mentioned, and it is our duty to be religiously attentive to every detail of cleanliness that will tend to protect our patients who trust themselves to our care from anything septic or unclean.

CORROSIVE SUBLIMATE.—The following note on the use of corrosive sublimate as a fixing reagent is published by Mr. S. E. Denyer, in the *Guy's Hospital Gazette:* A saturated solution should be used; this is best made by putting excess of $HgCl_2$ into boiling distilled water, allowing it to cool and crystallize, which insures complete saturation at the then temperature and pressure. It will be found that the addition of a small quantity of sodium chloride—about one-eighth that of $HgCl_2$—gives better results than the $HgCl_2$ alone. The tissue should be cut into pieces not more than four mm. in thickness, as the penetrating power of the $HgCl_2$ is only two mm. or thereabouts. Allow it to remain in the solution for from six to twenty-four hours, according to the nature of the tissue. Those tissues which include skin should not be left more than six hours, as they tend to become very hard, and this causes trouble in cutting. Wash thoroughly in water for twenty-four hours, then transfer to a mixture of Sp. Vin. Meth. and water, equal parts, for twelve or twenty-four hours, then to Sp. Vin. Meth. for two or three days. After this, dehydrate with absolute alcohol, clear with toluol, and embed in paraffin.

Digests.

The Dental Cosmos for July, 1896.

"CYSTS, THEIR TREATMENT BY CURETTING," by Dr. D. E. Wiber, Washington. Read before the union meeting of the Maryland State Dental Association and the Washington City Dental Society, at Washington, May 8, 1896. By the term cyst is meant a collection of fluid, non-inflammatory in its nature, generally encompassed by a sac or bag. In contradistinction between cyst and cystic tumors, I might add that a cyst contains within it nothing observable as a new growth and all its fluid is inclosed in one sheath sac; hence the terms "a cyst," and "cystic," convey lucid and distinct ideas of the nature of any tumor. A cyst, unless accidentally ruptured, is a permanent and usually a persistent swelling, with contents varying in character as well as consistence.

These forms of morbidity receive their distinctive names from the character of their fluid; thus we have the serous, mucous, synovial, colloid, dermoid, sebaceous, seminal, milk, salivary and sanguineous. Fortunately but few of the above named are discovered in the oral cavity. Again, when classified they are denominated as exudative, new formation, retentive, congenital and parasitic cysts.

The cysts most commonly found in the oral cavity are: ranula, alveolar, dentigerous and mucoid. These are all of the epithelial variety, and are developed either from glands or remnants of encysted enamel-organs. There is another class known as inflammatory cysts, which follow the destructive work of an alveolar abscess.

The principal location or favorite site of a cyst is generally in the neighborhood of the incisors, bicuspids, and the first molars of the superior maxilla. In the inferior maxilla their determination is at or near the first molar; they appear either single or multiple.

Their origin is probably confined to the cancelli of the bone, and in many instances they are caused by irritation, either slight or severe. A cancellus being filled with fluid or semi-fluid, expands and produces absorption and obliteration of intimate cancelli, until a cyst of considerable size, ranging from a pin-head to a hazel-nut in dimensions, is formed. Many times this process is continued until the

walls become membranous and the macerated bone shows great gaps in its continuity. These spaces are filled with medullary or myxomatous tissue.

The external layer of a cyst is established by the gum, which bears the unmistakable signs of an inflammatory degeneration. This is followed in turn by the periosteum, composed of coarse interlacing bundles of fibrous connective tissue, with mucous inflammatory areas. The bony wall of the alveolus has become reduced. The outer wall of the socket remains apparently undisturbed, and the cancellous bone-tissue has been reduced to a scanty bone formation by the inflammatory process.

The diagnosis is comparatively easy if a few points are borne in mind while making your examination. This should be by inspection, palpation, percussion, and, when there is doubt, the aspirator may be required. By inspection notice the locality; if near the first superior molar differentiate between it and empyema. In empyema remember the catarrhal symptoms in the nasal cavity; also, that by pressure the cyst may occupy the cavity of the antrum. When palpation is undertaken bear in mind that a cyst is more or less tense, hence elasticity, fluctuation or undulation become the objective symptoms to be relied upon. In percussion we have a very decided dull sound emitted. Soreness upon shock depends largely upon the inflammatory symptoms. The aspirator will always give satisfactory evidence of the nature of the growth and can be depended on for a diagnosis of contents, aided by the microscope.

The history of the case will perplex rather than aid the attendant. The patient will complain of very little pain if there is but little inflammation present; there may, however, be some headache, accompanied by a dimness of vision, more or less confined to the affected side. The growth of a cyst is usually slow; this point should be valuable in diagnosis; also that these growths are generally formed in individuals of poor constitution.

In the treatment of this condition by the method I am about to outline, the rigid practice of asepsis is urged; the operator's hands, the oral cavity as nearly as possible, and the instruments to be employed, should be thoroughly sterilized. The soft tissue adjacent to the field of operation, as well as the central point, should be locally anesthetized with cocain. The first incision is made over the greatest elevation of the protuberance, the length of the diameter of the

swelling at its base; this incision is carried directly down to the bony tissue; the parts are dissected back and cleansed, all bleeding arrested by a hemostatic. A circular trephine, mounted in an engine hand-piece, is then introduced and a section of the bony process removed. The sac, or outer covering of the cyst, is now exposed and incised; the contents should be examined, and if other than fluid, all foreign substance is removed. The sac should be obliterated by means of a curet. I have used for this purpose the right, left, and straight spoon excavators, scraping the inside of the bony cavity thoroughly, using very little force in the operation. When satisfied that there remains none of the cyst covering, the wound is carefully washed out with warm water containing an antiseptic preparation. The cavity is then packed loosely with sterilized gauze, and the patient dismissed. At a subsequent visit, possibly the third day, remove the gauze, cleanse out the cavity, and allow the wound to heal by granulation. This will be accomplished inside of ten days.

In pursuing this method I have met with astonishing results in two cases. The operation was painless and radical, the obnoxious swelling was permanently reduced inside of a brief period, and the wound healed rapidly with no depression over the seat of disturbance.

Translations from German Journals, by Dr. B. J. Cigrand.

PULP EXPOSURE. In the event of recent exposure of the pulp we recommend applying a paste made of iodoform and glycerine, covering same with a small piece of asbestos paper and protecting the entirety with cement. As soon as the cement has thoroughly set a gold filling may be inserted without fear of resulting pulpitis. —*Zahnarztliches Wochenblatt, July, 1896.*

A NEW HÆMOSTATIC. Dr. Frohman, a dentist of Berlin, has recently given to the profession the results of his experiments on Ferripyrin, and states that it has great hæmostatic properties. Its application to more than 100 stubborn cases of bleeding gave excellent results. Post-hemorrhage seldom resulted, and when it did further application caused permanent arrest. There are no painful after-effects and it yields perfect coagulation. Ferripyrin is a combination of one part ferric chlorid, three parts antipyrin and five parts water. It is a dark red liquid and can be purchased at the drug stores. It has an agreeable taste and is readily applied. In

case of a lower extraction employ a small spoon and direct a sparing amount of the mixture into the socket; in the event of an upper case apply a saturated pellet of cotton to the socket. It gives immediate relief and one application usually suffices.—*Journal fur Zahnheilkunde, June, 1896.*

COCAIN AND ANESTHESIA. The anesthetic effects of cocain are materially aided and a more certain condition assured if the liquid be slightly heated (90° F.) before injecting. Not only does anesthesia set in sooner, but it also lasts longer and is more decided. A weaker solution under this method may be employed and thus lessen the risk of producing cocain poisoning.—*Zahnarztliche Rundschau, July, 1896.*

FILLING DEVITALIZED TEETH. The following method has been highly recommended by Dr. C. A. Firthe, as being very efficacious in filling canals:

Thymol,
Mercuric chlorid, ā ā 2 grams.
Carbolic acid,
Tannic acid,
Morph. muriat, ā ā 1½ grams.
Ol. menth. pip.,
Ol. cassi, ā ā, eq. parts.
q. s. to form a paste.

My experience during the last three years with bicuspids and molars has been exceedingly satisfactory, and the following is my method of procedure: Subsequent to the complete devitalization of the pulp by the use of arsenic I employ a small piece of cotton saturated with ol. caryoph., apply same to the exposed pulp and seal it in the cavity with creamy cement and permit the medicine to remain in the tooth three days. At the expiration of this time I apply the rubber-dam and proceed to clean out the contents of the pulp chamber with a large bur, previously dipped in carbolic acid. I next cleanse the cavity by the application of a 50 per cent solution of Na H O and wash the chamber and canals with oil of cassia and spiritus vini rect. (1 minim in 20 grams), dry the cavity with hot air and fill the pulp-chamber with the above paste. Employ bone or ivory instruments in packing it. The paste is then thoroughly covered with tin or gold foil. Fill the cavity one-third with cement

and the remainder with amalgam or gold.—*Vierteljahrsschrift fur Zahnheilkunde, July, 1896.*

FORMALIN IN DENTAL PRACTICE.—Abraham is quoted as follows: By the use of this substance he has been enabled to avoid that form of secondary periostitis that so often complicates the treatment of periodontitis. It is his belief that the vapors of formalin have a regenerative influence upon the diseased periodontium and promote *restitutio ad integram*. The method of formalin treatment made use of by the author more recently is less complicated, and less likely to cause pain by the formalin accidentally overflowing on the surrounding tissue. He makes use of a powder, calc. sulphas., 200; hydrarg. bichlor., 4. These to be finely mixed; also a liquid form, acid sulphuric, 32; formalin, 100; aq. distil., 100. A few drops of the liquid are rubbed on a glass plate together with sufficient of the powder to form a paste, which, introduced into the previously dried root-canal, solidifies in a few minutes. The crown can be filled with any stopping desired. The small quantity of corrosive sublimate and sulphuric acid in the paste does not have any discoloring or corrosive effect on the tooth. The above proportions have been found to be the best as a result of numerous trials, and this formalin root-cement may be employed safely after cautery of the pulp, etc., and for closing the foramen piacale. In a few cases, after employing this cement a slight periostitis without pain has appeared, continuing only one or two days.—*Zahnarztliches Wochenblatt.*

Pacific Stomatological Gazette for August, 1896.

"CONGENITAL DEFICIENCY OF ENAMEL," by J. L. Asay, M.D., San Jose, Cal. Read before the Stomatological Club of California, April 14, 1896. The lesion which I present to you seems to me to be one of those rare cases of heredity of which we sometimes read but seldom see in such a total absence of enamel.

I first viewed the case, unfortunately, in a very hurried manner, as it presented itself during the hours devoted to patients who had regular appointments. So far as I had the opportunity to observe there is a complete absence of enamel of each and every tooth, both deciduous and permanent; the child being nine years of age. External appearance indicates a body well-nourished and in perfect health. There is the cicatrix from an operation performed when six

months old for hair-lip, which is about four lines to the left of the filtrum. The arch is somewhat higher than the average, but no signs of cleft palate.

Being taken by surprise I confess to having been too hasty in forming an opinion regarding the etiology of the lesion and at once hazarded the conclusion that it was one of those sequela of the exanthemata, and without further inquiry proceeded to the consideration of how to correct the deformity without doing the child manifest and subsequent irreparable injury.

Upon a subsequent call of the mother to my office I had a leisure half-hour and made further inquiry into the case, and to my amazement was informed that the child had never been sick a day in her life, save those ephemeral complaints incidental to infancy; that the mother had uninterruptly enjoyed good health throughout the period of gestation, and that her teeth were in the same condition as her daughter's before extraction and crowning. I at once examined the mother's mouth and am confident she is correct in her statement, for I found this state of facts existing. She is wearing an upper artificial set of teeth on rubber base. The lower incisors and cuspids are restored with Richmond crowns, but the bicuspids and molars remain, or at least did remain, until I extracted this lower third molar, yesterday, for reasons quite justifiable to myself and patient.

An inspection of this will show what I found to be the condition of the remaining natural teeth—that is, the entire deficiency of enamel, except a ring at the gingival margin. There was no other oral deformity; signs of hare-lip or unusually high arch there were none.

Judge of my still further surprise when the mother told me her father's teeth exhibited the same characteristics in every particular, and that he also had been operated upon for hare-lip in early life.

Still ascending in the scale of almost incredulity, she informed me that her grandmother's teeth were in a like manner entirely devoid of enamel, but how much further back in her ancestry this deformity extended she had no knowledge, other than that tradition said there had always been one in the family for generations back who presented this condition. I was further impressed with the information that this deficiency was confined to but one member of the family of brothers and sisters in each generation, the others having healthy mouths, with teeth strong and well preserved.

Thus we see that this deficiency of enamel, either total or in part, has continued to a certainty through four generations—the great-grandmother, the grandfather, the mother, and now—but who shall dare to say lastly—the daughter.

I have thus merely given you the facts as I found them and the information imparted to me. Neither mother nor daughter has ever been afflicted by scarlet fever, measles, variola or other exanthematous diseases; nor is there any history of these eruptive fevers in any of the parents or grandparents, but all for generations back—as far as the family sayings go—were physically and mentally perfect, except in the matter of the hereditary lesion referred to.

I will simply state that my advice to the mother as to the corrective agents to be employed was to do nothing for the present, save cleansing and arresting caries, but when all the permanent teeth have been fully erupted except the third molar, when the arches have been fully developed, then a series of crowning for each tooth can be indulged in which will be durable and a comfort and pleasure to the little patient.

I should operate only when the social accomplishments invite every young lady to present her best personal appearance. I would relieve her as early as possible of the mortification she would naturally feel from so great a deformity at that time of life when she is making new friends and looking forward to her own settlement in life.

My advice is to crown then but not before, and on no account to extract the teeth and substitute plates.

"Some Experiences in the Administration of Nitrous Oxid Gas," by Mayo A. Greenlaw, D.D.S., F.C.S., San Francisco. Read before the San Francisco Dental Association, August 10, 1896. We find when administering gas that the suspension of breathing is very uncomfortable and often distressing to the patient, and this must be overcome. I do not mean the hysterical condition affecting persons, that comes from the gas, but I mean the suspension from physiological causes. I have found three causes or kinds.

The first will take place immediately on loss of consciousness, when the patient, from fear or perverseness, has been persuaded against his or her will to continue breathing the gas. While volition lasts the sensory and motor ganglia, being as yet unaf-

fected, will carry out the feeling of resistance by a sort of mentality of their own, and breathing will cease. Sometimes this persistence will continue so as almost to produce suffocation. On removing the mouth-piece and pressing the finger against the fauces the patient will resume respiration with a gasp and you can proceed with the administration.

The second kind consists of those who exert themselves to breath immoderately, deeply and rapidly, so that when the action of the lungs is no longer controlled by volition, breathing will cease from fatigue, and rest follow involuntarily for several seconds, sometimes requiring considerable effort to bring about a resumption of the normal action. In both kinds it is important to recognize early the cause and effect, and to apply the proper remedy promptly, remembering that while respiration is suspended the anesthetic effects are continually increasing, particularly that phase which is produced by what is known as want of oxidation.

The third cause of suspension is produced legitimately by the physiological effects of the gas and its accompanying asphyxia directly on the nerves which control the action of the diaphram and lungs. To my mind this condition is caused more by the apparent asphyxia or want of oxygen than by the actual effect of the gas. Of course, an excessive dose of gas might produce this effect, as it has been reported in most of the cases of death in animals that the lungs ceased their action before the heart stopped beating; but in cases to which I refer there will be no indication of an overdose—in fact, it will sometimes take place before the patient is sufficiently under the influence of the gas to permit an operation.

The appearance presented by patients liable to these troubles will cause the operator to be on guard to avoid any danger. As, for instance, persons with dark-colored blood, as shown at the lip, will arouse suspicion, and you will notice that such people take very slow and shallow inspirations naturally. This shows that their blood is overcharged with carbonic acid; or, I may say, they do not breath a sufficient amount of oxygen to relieve the blood of its accumulated carbon, and at the first inhalation the dark color appears and deepens. They will, apparently, be in good health, and, as far as their lungs are concerned, may be entirely free from any disease, but are seemingly particularly weak in their breathing functions, which will sometimes be as low as twelve to fourteen respirations to the minute.

And, as the gas is administered this discoloration increases, the breathing grows slower and less deep, and, should the administration be continued, would stop entirely.

Now, when one becomes familiar with this condition, admission of atmospheric air to the lungs is a great antidote for the ill-effects produced by the gas, in these cases especially, and all bad results are avoided.

Should respiration cease then every effort should be made by artificial respiration to restore it as quickly as possible, remembering that the condition of deoxidation is in a great part responsible for the effect. And as the heart's action is still going on, every second lost adds so much more to the depth of the pressure on the nerves already nearly paralyzed. There are a number of methods of artificial respiration, but any that will force the gas from the lungs will answer the purpose, and so restore proper breathing. A great many think these effects are produced more by the accompanying deoxidation of the blood than by the direct effects of the gas; and it is of interest that we should discuss just what the effects of gas are, and how produced. There are different theories on the subject. Some claim to produce anesthesia by over-oxidation, because of its containing another equivalent of oxygen as compared with atmospheric air; but it has been shown that it goes into the lungs nitrous oxid and comes out the same, with a little less carbonic acid, showing that no separation of the oxygen from the nitrogen takes place.

A late theory has been put forth that this gas has no anesthetic properties in itself, but that its effects are produced solely by the condition known as the want of oxidation or deoxidation of the blood. Now, if such was the case, any agent cutting off the supply of oxygen would produce the same effect, but there is nothing known that will produce this result in the same time.

Probably the most correct theory is that we have a double effect produced: one by the gas, which is as pure and legitimate an anesthetic or narcotic as any now known, and another the accompanying effect of deoxidation, which helps to produce the anesthesia, but which is responsible for the disagreeable symptoms, such as asphyxiating appearance, violent convulsive muscular contraction and twitching. Now, if this element that produces this condition could be removed, we would have one of the best anesthetics that could be desired for dental use. To meet this great desire it has been

suggested that the gas should be mixed with pure oxygen or diluted with atmospheric air; but, from what I have learned, this has not proved satisfactory. It is not admissible to dilute the gas with air, for you meet patients of such diverse constitutions that some will fail to come under the influence at all; some will require more than others, and, if diluted with air, complete narcosis is utterly impossible. However, the evil effects of lack of oxygen can be mitigated very perceptibly by allowing a little atmospheric air to pass through the nose when inhalation is about half completed. Not enough to counteract the gas, but just enough to supply a little oxygen to relieve the discoloration; and herein lies the secret of avoiding dangerous symptoms, which may be called "constricted glottis." By so doing I have administered the gas in this way to some patients without the least inclination to stoppage of respiration.

In long operations, where the patient has been under the influence from three to eight minutes, alternating with gas and air will cause the blood to be clear of discoloration or severe twitching, which is shown where the pure gas has been given.

A great many operators prefer the simple mouth-piece to the hood-piece, as the former gives you full view of the face and lips, while the latter covers them up and you cannot have proper view of them, except by raising the hood, and where you can see the discoloration it can be relieved to a great extent with very little trouble. I have used both and find the improved hood very satisfactory, as the arrangement is perfect for the admission of air at any time needed and shutting off the supply of gas.

British Journal of Dental Science for August, 1896.

"ORAL SURGERY," by Edmund W. Roughton, B. S., M. D. (Lond.), F. R. C. S. Eng. Cancer of the Tongue. Sarcoma of the tongue is such a rare disease that it is only necessary to mention that a few cases have been recorded. Carcinoma, on the other hand, is of very common occurrence. It is remarkable that only one variety of carcinoma (viz., the squamous-celled epithelioma) affects the tongue. Any part of the tongue may be affected, but it is more common on the anterior half than the posterior and on the edges than on the dorsum.

The essential *cause* of cancer on the tongue is, like that of other

tumors, still unknown, but the conditions which favor its growth and development are more evident in the tongue than in any other part of the body.

Age has a most important influence. The disease is almost unknown before the age of thirty; the great majority of cases occur between forty and sixty.

Males are much more liable to the disease than females, the proportion being as great as six or seven to one. This is probably due to the greater prevalence of smoking, spirit-drinking and syphilitic affections of the tongue in the male sex.

The influence of inheritance as a predisposing cause of cancer has been exaggerated in past years, sufficient allowance not having been made for the effects of similar conditions affecting both parent and offspring.

Smoking and tobacco-chewing have no direct effect in producing cancer, but if they cause soreness or excoriation of the tongue they do to a certain extent act as predisposing causes. Cancer much more often affects a tongue which has been the seat of previous disease than a healthy one. Such conditions as leucoma, fissures, ulcers and scars, whether syphilitic or not, are well-known precursors of cancer, especially when they have been repeatedly irritated by caustics or other unsuitable remedies. Carious teeth, badly-fitting dentures, highly-seasoned food, strong drinks, the rough stem of a tobacco-pipe may all cause sore places on the tongue, and so act as predisposing causes of cancer.

Cancer of the tongue may *commence* in various ways; the first evidence of disease may be a blister, an excoriation, an ulcer, a fissure, a papule, a wart, or a lump. This variability is not due to any inherent mutability such as one sees in syphilitic affections, but to the number of different conditions upon which cancer may become engrafted.

A blister or papule very soon becomes a small excoriation or ulcer, so one description will suffice for the five first conditions mentioned above. It is but rarely that the first commencement as a blister or papule is seen, so soon do they become ulcerated. The ulcer thus formed is usually chronic and indolent, discharging but little, causing little or no pain, and showing no tendency to change; if on the border of the tongue, it stands out on a slightly raised base. As the result of continued irritation the ulcer slowly enlarges,

or the fissure becomes deeper. The surrounding area becomes a little angry and the base of the ulcer imperceptibly harder; the advent of induration is a most important feature and may be taken to indicate that the sore has become cancerous.

Small warty growths with well marked pedicles in young persons are of very little importance, but dense hard warty lumps in older subjects, especially when found on a leucomatous tongue, are very liable to become cancerous. This unfavorable change is indicated by the growth becoming larger and firmer, and by the surrounding area becoming indurated; ulceration soon occurs.

The least frequent way in which cancer begins is as a small lump or nodule in the deeper part of the mucous membrane. Such a lump is probably cancerous from the first. It slowly enlarges and projects upon the surface of the tongue and breaks, giving rise to a foul sore with everted edges, or allowing a fungous mass to protrude.

The *objective characters* of the fully developed disease are very striking, although differing considerably in different cases. Sometimes it forms a large prominent mass composed of several red raw tubers growing from a constricted base and surrounding a central depression occupied by a dark, greenish-gray slough resembling "the unfolding of some hideous flower, with its red and fleshy petals turned back, and a horrible mass of corruption hiding its pistil and stamens." Sometimes one-half of the tongue is transformed into a raised warty and granular mass of irregular form covered here and there with sloughs or coagulated pus, and broken by deep and irregular fissures. Sometimes the disease forms an oval ulcer devoid of granulations, but with a smooth glazed surface and its central part depressed. Occasionally the whole tongue is transformed into a hard inelastic substance like a piece of wood. Although ulceration occurs early as a rule, and is a characteristic feature, it is sometimes absent in cases of warty epithelioma, the growth resembling a simple papiloma but for its indurated base. A common form for the disease to assume is that of a deep foul excavation with raised everted nodular edges, and a surface covered with slough, pus and decomposing food. The glands beneath the jaw are early involved and assume the hard fixed character already described when speaking of epithelioma of the jaws.

The chief *subjective symptoms* are pain and salivation. Pain is often present from the first; it may be lancinating, aching or gnawing,

and frequently radiates to surrounding parts, especially the ear. In some cases the pain is so slight that patients do not seek advice until the disease has assumed very serious proportions. Pain is, of course, increased by taking food and by mastication. Salivation is not usually a source of much trouble until the disease is far advanced, but in the later stages it is very distressing and greatly aggravates the patient's sufferings.

The *course* the disease pursues depends to a large extent upon its position. If situated on the border of the tongue it tends to infiltrate the floor of the mouth and extend to the mandible. The tongue becomes fixed in the mouth and can no longer be protruded. When the disease commences at the back of the tongue it spreads to the epiglottis and even the larynx, or involves the arches of the palate and tonsil. The spread of the disease to neighboring parts renders speech and swallowing difficult and painful. When the tongue is fixed to the floor of the mouth and there is much salivation it is sometimes impossible to understand what the patient says. Fluids and soft solids can be fairly easily swallowed, but food which requires masticating and collecting from between the teeth is a source of great trouble.

The majority of patients die of exhaustion brought on by hemorrhage, pain, salivation, inability to take sufficient food, suppuration and want of sleep. The fatal result is often determined by the onset of septic pneumonia.

The *duration* of the disease in unoperated cases is about eighteen months from the onset, but many cases die within a year.

The *diagnosis* of cancer of the tongue in its advanced stage is usually a matter of no difficulty, but in its early stage it is often well nigh impossible to differentiate it from syphilitic affections, tubercular ulcers, innocent papillomata and simple ulcers and fissures, and the difficulty is increased by the fact that several of these conditions may be transformed into cancer by almost imperceptible gradations.

The diagnosis of a primary sore upon the tongue has already been dealt with. Secondary syphilitic affections are scarcely ever mistaken for cancer, but in the tertiary stage mistakes are easily made. An unbroken gumma may be mistaken for that sort of cancer which commences as a lump or nodule in the deeper parts of the mucous membrane. The resemblance between the two conditions may

sometimes be so close as to render diagnosis impossible; both occur for the most part on the dorsum, in both cases the lump is at first ill-defined, firm, and intimately associated with the tissues of the tongue, in both the progress of the disease is at first slow, and there is no affection of the glands. On the other hand gummata may be multiple, whereas carcinoma is nearly always single. A history of syphilis may be obtained, or there may be scars or other signs of previous syphilitic disease, but too much weight must not be attached to them, as cancer may occur in old syphilitic tongues. In these cases the effect of treatment by large doses of iodide of potassium may clear up the diagnosis. Gummata may also be mistaken for cancer when they have become ulcerated. In making the diagnosis the following points must be borne in mind: Gummata frequent the central portion of the tongue, cancer chiefly the borders; the edges of the gummatous ulcer are usually undermined, those of cancerous ulcers are raised, nodular and hard; gummatous ulcers are often multiple and are rarely so deeply or so widely indurated as cancer; the lymphatic glands are scarcely ever affected in tertiary syphilis, whereas they are almost always involved in cancerous ulcers of any duration. The effect of antisyphilitic treatment may clear up the diagnosis, but on the other hand, it may lead to a waste of valuable time; it should therefore be employed only in quite early cases. A microscopic examination of a scraping from the surface of the ulcer may afford valuable information.

The diagnosis between tubercle and cancer is often a matter of great difficulty. The same situation is common to both, both may have their origin in an injury, and in both there may be lymphatic enlargement. In typical cases the absence of decided induration, the sodden condition of the adjacent portions of the tongue, the pink color of the surface of the ulcer, the presence of caseous material, and the small yellow tubercles in the surrounding mucous membrane serve to distinguish a tubercular ulcer. Tuberculous ulcers often appear in subjects who are too young for cancer and in whom there are other signs of tuberculosis. The differential diagnosis between these two conditions is not a matter of very great importance, as the treatment is the same in both, viz., excision.

In distinguishing between a simple and a cancerous wart, most reliance must be placed upon the presence or absence of fixation, induration and ulceration, and it must be borne in mind that a simple

wart may become cancerous. The examination of a scraping from a warty growth is of no value unless the surface is ulcerated.

The diagnosis between a simple ulcer and a cancerous ulcer has already been discussed.

The *treatment* of cancer of the tongue comprises the treatment of pre-cancerous conditions as well as that of the fully developed disease; indeed the former is much more important than the latter, for although cancer can nearly always be prevented by timely and judicious treatment of innocent sores, it is but rarely that the fully developed disease can be permanently cured. All indolent ulcers and warty growths in persons over thirty must be dealt with by remedies most likely to effect a cure, and they must be most carefully guarded from every source of irritation. Rough or carious teeth and badly fitting dentures must be efficiently treated by the dentist. Smoking, tobacco-chewing, strong wine and spirits must be given up, the food must be neither very hot nor very cold, neither very sour nor very sweet, and not highly spiced. All applications to the sore place must be unirritating, and caustics must be religiously avoided. If under careful treatment an indolent sore or wart does not show marked signs of improvement in a fortnight or three weeks, it should be cut out. The operation is a trivial one, as it is only necessary to remove the disease and a small surrounding area of healthy tissue. In many cases it may prove the means of saving the patient from the horrors of death from lingual cancer.

The operative treatment of actual cancer of the tongue is not attended with good results, and this is chiefly due to the operation being so often postponed until the disease has become so extensive that it cannot be thoroughly removed. It is estimated that only about 10 per cent of patients operated on for cancer are permanently cured, and that in cases in which a cure is not effected the duration of life is increased six or eight months. It should, however, be added that even though death is the ultimate result, the sufferings of the patient are much less when brought about by a recurrence of the disease in the glands of the neck, than when due to a continuance of the growth in the mouth. The mortality directly due to the operation is rather over 10 per cent.

As a general rule, unless the disease can be very fully and freely extirpated, it is better not to operate, for the tendency to recurrence *in situ* is very great. When the disease has extended to the floor

of the mouth, the mandible, the arches of the palate, the tonsil, or has largely infiltrated the glands of the neck, the advisability of operating is doubtful. In determining the question much will depend upon the general condition of the patient,

The tongue may be removed either wholly or in part by the following methods;

(1) From within the mouth, without external incision, (*a*) by ecraseur (Morrant Baker), (*b*) by scissors (Whitehead). (2) From within the mouth, the cheek being divided on the same side as the disease (Furneaux Jordan). (3) Through the mylo-hyoid space (Regnoli). (4) By division of lower lip and jaw (Syme). (5) Through submaxillary region (Kocher).

For the details of these operations, and the various conditions for which they are suited, consult a work on Operative Surgery.

Popular Science News for August, 1896.

"CARE OF THE TEETH," by F. H. Funston, M. D., New York City. No meal should ever be partaken of without immediately thereafter rinsing and washing the mouth with clean, clear water, if nothing else, and obviously the addition of some pleasant antiseptic, like Euthymol is preferable. So, too, this act should be succeeded by a thorough scrubbing of the teeth with a moderately stiff brush, passed both laterally and perpendicularly over front and back surfaces alike; not even the most microscopic quantity of food should be allowed to remain in the interstices of the teeth or about the gums. Such a measure, if carefully carried out with the aid of a strictly antiseptic dentifrice, will prove not only a means of warding off offensive breath and the many maladies common to the gums and teeth, but will speedily eradicate tartar and retracted gums.

During the last half-century dentifrices have multiplied by thousands, each presenting its own peculiar claim. Some are really valuable; others are harmless; not a few are dangerous. In the latter connection too great stress cannot be laid upon the fact that any article intended to be utilized for the toilet of the teeth and which presents an acid or markedly alkaline reaction, is to be regarded with suspicion; it may be added that a number in the market are neither more nor less than dilute solutions of spirit of salt (muriatic acid), which is most rapid in its action upon enamel,

and moreover promotes decay and tends to produce offensive exhalations. Others are little more than pleasantly flavored soap; but if the latter ingredient is good and pure it cannot be considered objectionable. Tooth powders, too, which sometimes accompany fluid dentifrices, must also be looked upon with suspicion, as they not infrequently contain ingredients that may prove detrimental. And it may here be remarked that those applications for the teeth which are warranted to immediately whiten are always dangerous, inasmuch as they rely upon strong chemicals for their action.

A recent improvement in this line is manufactured by Parke, Davis & Co., Detroit, whose reputation as purveyors only of legitimate products for the medical, pharmaceutical and dental professions is sufficient guarantee that it, at least, presents none of the objectionable qualities that are too often found in preparations of this kind. This is Euthymol tooth paste, which, as its name indicates, depends in large measure for its value upon euthymol, a preparation that has long been employed by surgeons wherever perfect antisepsis was desired, and has moreover deservedly gained universal popularity because of its freedom from danger except to germ life.

To the mind of the writer this preparation warrants specific mention, inasmuch as it offers the ideal of a dentifrice in that it is at the same time a powerful antiseptic, reasonably detergent, modest in price, pleasant in odor and exceptionally grateful to mouth and gums, while last, but not least, its use affords a positive protection against foul breath and other conditions peculiar to the mouth that lead to retraction and softening of the gums, staining of enamel, formation of tartar and decay; it is likewise a reasonably certain guarantee against a number of diseases which gain entrance to the human organism through germs in the mouth and digestive organs.

The Ohio Dental Journal for August, 1896.

"SYSTEMIC REMEDIES," by H. L. Ambler, D.D.S., M.D., Cleveland. The purpose of this paper is to suggest a few of the systemic remedies for relieving functional nervous troubles in patients who present themselves for dental operations, so that reflex irritation of the whole nervous system may be reduced to a minimum or entirely obliterated. No doubt much can be accomplished in this direction, and we suggest that others continue the work so that at

some future time they may give us further data, accompanied with names of drugs, formulæ and method of exhibition, especially in phagadenic pericementitis.

The sense of hearing is always noted by the patient, as affected by the use in the mouth of sandpaper disks, carborundum strips, files and all forms of cutting instruments which are used in the engine. Perhaps the one which makes the most noise is a large coarse corundum wheel. Much of mechanical irritation and vibration can be eliminated by discarding the cable and using any cord engine. To have the nerves toned up to a healthy condition, so that these noises and unpleasant sensations will be tolerated, or for the time being to partially obtund their sensibility by administering systemic remedies, is a desirable consideration. Proceeding on this plan, if a patient has neurosis from gastric trouble he should be cured or relieved by proper remedies, possibly by administering Phillips' milk of magnesia, zymocide, nux vomica, etc., before proceeding to operate. The length of time for their exhibition would be varied according to the case.

In neurasthenia from any cause, perhaps we have the most difficult cases to operate upon. Patients in this condition do not wish to be touched because they are so irritable, much less do they want sensitive teeth excavated. No doubt this condition keeps some patients away from our offices. Here the nerves need nutrition, which is obtained through the blood; thus it must be supplied with proper food, so that it in turn may build up the nerve cells. If the remedy is supplied in form of drugs, iron, quinine and the phosphates would be advisable.

The reflex irritation from the brain, produced by fear, has been overcome in nearly every case by hypnotic suggestion, as demonstrated by Dr. Sudduth and others. Perhaps this method will not come into general dental use, but to those skilled in its application it is a success. It has been employed for years in general hospitals abroad for minor surgical operations, rheumatism, hysteria, chorea, etc. Once in a great while a young, timid patient when occupying the chair for the first time will faint, caused by dread of what they think will surely happen in the form of pain; and occasionally patients will faint habitually when they go to the dentist, whether they are hurt or not. Both local and constitutional influences affect he teeth, and we can often correct local causes by systemic treat-

ment. Nervousness, accompanied with pain, arising from a low vital or unoxigenized condition of the blood, is often relieved by inhaling nitrous oxid. Patients who are anemic and more or less prostrated nervously, would certainly dread to visit the dentist, and before doing so should guard against fatigue, over-excitement, loss of sleep, too much coffee, or going too long without proper food. In health the nervous system is neither excited nor depressed; it works in harmony with its requirements, but if you apply irritation, as for example, cutting in sensitive dentine, then this harmony is destroyed, and the amount and extent of irritation is in proportion to the amount and extent of derangement caused by the cutting. Bichat says that life rests upon the tripod of innervation, respiration and circulation; and whatever affects one of these legs affects the whole body. This statement can be fully appreciated by a very large number of persons who can testify that excavating sensitive dentine causes direct irritation and greatly affects the leg of the tripod called innervation, thus irritating the system at large; the patient becomes restless, shrinks, jumps, holds his breath, with increased flow of saliva, headache, nausea, muscular spasm; desire to urinate. The nervous system has a mode of action of its own, and this action is susceptible of exaltation, depression or deprivation. The brain, spinal cord and every nerve periphery require a certain amount of and a certain character of blood for their proper nutrition. Too much and too nutritious, then we have over-stimulation; too little blood and too poor, then we have derangement from lack of pressure and nutrition.

Nervine for general nervous disturbances, tincture valerian and gentian, equal parts, in teaspoonful or tablespoonful doses, according to indications.

When necessary to keep up a continuous impression, use ten grains bromide potassium dissolved in a wine-glass of water; administer this amount from two to four times per day.

For lassitude and anemia, use Dr. Weld's non-alcoholic tincture of iron, or tincture iron one ounce, sulphate of quinine one dram; administer fifteen drops of this combination three times per day.

"GOLD FILLING—CONSIDERATION OF MINOR DETAILS," by P. G. Wood, D.D.S., Corry, Pa. Read at Lake Erie Dental Society, Cambridge, Pa., May, 1896. In considering the subject

which has been assigned me it seems wise to leave its more weighty phases for discussion by those master minds who have new and original ideas to present, and I shall, therefore, content myself with simply calling your attention to some of the minor details; little things which, when slighted, are the cause of many an imperfect gold filling. It is axiomatic that the perfection of any operation is largely due to the careful attention given to details, and gold filling is not an exception to the rule.

Taking a proximal cavity in a superior incisor as a typical one for consideration, the first point to claim our attention is to see that the teeth are thoroughly polished and cleansed of all debris that may have collected between them or around the gingival borders. Now, it is a well known fact that a tooth is less sensitive when thoroughly desiccated, so it is better to adjust the dam before any excavating has been done, and in placing it in position let it embrace a large enough number of the adjacent teeth so that it will neither obstruct the light nor be in the operator's way during the remainder of the operation. A doily placed underneath the dam to keep it from the patient's face, will not only be duly appreciated by the patient, but will also tend to the successful completion of the filling, for anything that places the patient more at ease aids the operator. Further desiccation of the tooth by the use of warm air will lessen the sensitiveness, and also aid us in detecting all unsound tooth-structure. Now gain free access to the cavity, so that all parts can be plainly seen either by direct or reflected light, preferably of course from the palatine side; but it is far better, if necessary, to sacrifice some of the labial wall at the expense of the gold showing than it is to court failure by working in the dark. And I would urge the desirability of having the teeth slightly separated, if naturally very close or crowded. A few fibers of cotton packed between the teeth at the time the examination is made, should it be a few days prior to the operation, will greatly simplify it for all concerned; then when the teeth return to their normal position we will have the natural lateral contact, so much to be desired.

In shaping the cavity avoid all sharp angles in the margin, or deep pits within. Let graceful curves abound, and make sure that the margin of the cavity will be free, so as to be not only easily kept clean, but as nearly self-cleansing as possible when the teeth return to their natural position. A great mistake is often made,

and subsequent failure invited, by leaving the palatine wall intact to build the gold against. Better cut it away and replace with gold than leave it to be broken out by the occlusion of the lower teeth in mastication.

Finally, before packing the gold, carefully polish the margin of the cavity with a medium fine strip, for a much closer adaptation of gold can be made to a smooth surface than to a rough one. In packing the gold let small pieces and small instruments be the rule, filling the most inaccessible portions of the cavity first, always keeping the filling, as it progresses, as nearly level as possible.

It is unnecessary to speak of properly contouring the gold, but it will not be amiss to caution against ruining a nicely contoured filling by using too large disks or wheels, and too wide strips in finishing. After the gold is packed burnish thoroughly from the middle toward the edges of the filling and repeat often during the use of strips or disks. Many a filling might be improved if this were thoroughly done.

And having ascertained from the dental supply agents that a very large proportion of the disks used by a majority of operators were of the larger varieties—above one-half inch in diameter—I would emphasize the statement by repeating that the large disks and wide strips are to blame for the *flat* condition of many of the fillings we see, which should be nicely contoured. And I conclude with the assertion that the greatest cause of all the imperfections in our gold fillings is not the operator's lack of ability to do better work, but it is due to carelessness in the minor details of the operation.

International Dental Journal for August, 1896.

"A System of Detachable Facings," by W. L. Mason, D.D.S., Red Bank, N. J. Read before the Academy of Stomatology, Philadelphia, April 28, 1896. I present to you to-night, for your consideration, a system of detachable facings for crown and bridge work—a system that does not in any way change the appearance of the perfectly made crown or bridge of to-day.

About sixteen years ago porcelain facings, soldered to gold bands, were put in general use and closely after came the bridge work, very crude at that time, but advancing rapidly to the almost perfect construction of to-day. I could say perfect but for one fault, and that is the uncertainty of the condition of the porcelains after

soldering and cementing into position. I know that we have teeth to-day that stand the strain better in the process of forming them into crowns or into bridges, but they will never be made to expand or contract like metal. We may be very careful in heating an invested piece for soldering, and cool off properly, and try the piece in, and have no strain upon it, so we cement in position. As near as we can see we have a perfect piece of bridge work. But just as long as the piece is in service the porcelains are apt to separate from their backings. I think it is a great necessity that we attend to the future conditions which are apt to happen with a porcelain on crown or bridge. There is constant possibility of having a patient back with a porcelain broken off, and we should so construct our work as to replace damage quickly, not only to the patient's comfort, but also to our own.

I will acknowledge that I have never yet repaired a bridge in the mouth to my own satisfaction where the porcelain was soldered to its backing. Is it practical to have a porcelain detachable? It must be, for scores have tried to produce them. Patent records show the efforts made. Up to the present time none has been invented so that it can be manufactured and sold to the dentist for his immediate use, and whether it is practical or not, I would leave for you to examine the mode of forming and judge for yourselves.

In my judgment a detachable porcelain is just as important to crown and bridge work as crown and bridge work is to dentistry. For a number of years I have been seeking a mode of constructing the porcelains so that they would be separate, but have a perfect contact with the backings and be equal to the facings now in use. Through that effort I have produced a system of dovetail and grooves to match, and a process of manufacturing whereby a porcelain is made independent of its backing, and a porcelain from one mold will fit each and every one of the backings made for that size mold, or universal in their use.

Before going further I will call your attention to a few illustrations of the process. Fig. 1 shows a lower canine crowned and cemented to its root. Fig. 2 shows its porcelain sliding from its backing. Fig. 3 shows porcelain and backing separate. This illustrates the mode of constructing the anterior upper and lower six teeth. In Fig. 3 we have a metal dovetail fitted perfectly to the

back of the porcelain and extending a little beyond its cutting-point; it also shows its solid backing with a groove to receive the dovetail. It will not be necessary to go into the detail of the construction of the parts, but only that part of the work that is left for you to finish, as the porcelains with the metal dovetail attached and the grooved backing are manufactured. The tooth with its backing is fitted to the band by grinding out where necessary. Then wax the gold backing to band, and after wax is hard take hold of extended portion of dovetail and draw from backing. The crown is now ready to invest. Be careful to fill up the dovetail groove and let investment material come over cutting-point of backing so as to keep out all solder.

Heat up solder and cool as quickly as you like. After removing from investment see that the groove is thoroughly cleaned and dried; also dovetail on porcelain. Now take some chloro-percha, quite thick, fill up groove, and force porcelain in position Saw off (don't cut) the extended portion of metal dovetail. Then finish as usual. For use as a dummy, articulate to position and join parts with wax. The condition for the posterior teeth I have changed somewhat. Fig. 4 shows a molar dummy, with its cusp and porcelain together, having the same general appearance of molar dummy in general use, with the exception that the porcelain takes up more space on its palatal portion, making a saving of gold.

Fig. 5 shows the dummy parted, giving a view of the joining parts of a solid gold cusp, the upper buccal portion sloping upward and backward toward the ridge, and having on its face a square pin extending forward and upward. Fig. 5 also shows porcelain with square hole extending from surface just above the cusp portion, upward and outward to receive square pin fitted to cusp. After placing cusp and porcelain together the dummy is ready to grind in position. Wax parts together, remove porcelain, and solder. Cement porcelain to pin and finish as usual. The advantages gained by this method are many, and can be appreciated only by practice.

The first advantage will be that you do not have to place your teeth under the flame of a blow-pipe. *Second.* You have a solid backing without bubbles, as all parts are dropped forged. *Third.* You can heat up your invested piece quickly, and not have to take the usual care; also cool off quickly. *Fourth.* The small amount of solder you have to use—just enough to join parts together. *Fifth.*

Saving your porcelain from being etched by borax. *Sixth.* You are able to fit a bridge, releasing the strain by cutting and resoldering, and not have the porcelain interfered with. *Seventh.* The most important of all. The amount of time saved to the busy dentist will equal about half of the time spent in the old method, besides being free from annoyance in spending part or whole of a day repairing a bridge; with this system the repair is but a matter of a few minutes. If you put a tooth of mold No. 22 on, and it should break, you may order an exact duplicate of same and slip it in position, keeping yourself in good humor, and giving your patient the greatest amount of satisfaction.

The Dental Review for August, 1896.

"REFLEX FACIAL NEURALGIA," by T. H. Morrison, M. D., D.D.S., St. Louis, Mo. After reading and hearing articles without number often repeated, on subjects I consider worn out, such as filling roots, etc., etc., it has occurred to me that very *little* attention has been given to facial reflex action.

Several cases of apparently idiopathic neuralgia came my way as a last resort, after long continued treatment by the physician or neurologist. I did nothing at all mysterious, simply removed the exciting causes, all done in a very short time and followed in nearly every instance by absolute and permanent relief. How much better if some one of our calling had been consulted and examined the oral cavity and contents, instead of the physician asking "Are your teeth all right?" and then proceeding with his big prescriptions, many of them doing more harm than good, by the way. Physicians treat symptoms as a rule, but (as a learned judge of Missouri terms us) "tooth carpenters" spend their time in hunting for and removing causes of pain and disease.

In a genuine case of reflex neuralgia one might prescribe quinine, iron and arsenic in their various forms forever to no avail. Medical books say in regard to the etiology of neuralgia that malaria, gout and anemia are responsible, and little more than mention reflex action and decayed teeth.

I know there are some neuralgias (called idiopathic), but many, especially of the second and third branches of the trigeminus, are reflected pain from the teeth, some from growth and diseased bone, growth in the nasal cavity and middle ear, and eye-strain. How-

ever, the teeth are accountable for over one-half of all severe reflex neuralgia, in my opinion.

Webster says, "Neuralgia is a disease, the chief symptom of which is a very acute pain, exacerbating or intermittent, which follows the course of a nervous branch and its ramifications and seems therefore to be seated in the nerve." That last was well put and protects Webster nicely for all time, for we know that things are not always what they seem. Abnormalities in the condition, number and eruption of the teeth do cause pain elsewhere, and chiefly along the branches of the fifth pair of cranial nerves and their ganglionic connections.

We see fewer cases of neuralgia than we should, because the medical practitioner does not know that the most acute intermitting facial neuralgia is often caused by the formation of a pulp-stone or nodule inside the pulp-chamber of a tooth; also that neuralgia is the subjective symptom of a growth of pericementosis or exostosis. They know about growths of bone and swellings causing pressure and exciting inflammation along the whole nerve-sheath, but what do they know about these delicate and difficult subjects for diagnosis in relation to the teeth?

I tell you, dentists could teach them a thing or two, and save suffering humanity from shotgun prescriptions and the too free use of somniferous drugs, as well as surgical operations, such as neurectomy, neurotomy, etc. I mean by this only that such things are done too hastily and without proper consideration. When I do not know the cause of anything, I do not take it for granted that no one else does, but am perfectly willing to have any one's opinion, and always seek it when in doubt. Shall I speak from observation, recalling several cases, one treated by a celebrated neurologist for over a year, and which by chance came to my hands? There was not a cavity of which either the patient or the physician knew, in fact the enamel walls had not broken down. I did about fifty dollars worth of work in nothing but amalgam fillings, so you can imagine how many billions of nerve endings were irritated. The case was cured permanently.

Another was operated upon by an equally renowned surgeon, and the superior dental nerve removed entirely; neuralgia still prevailed in as bad, if not more terrible form. After many months one lone upper molar, which had roots each twice the normal size, was

extracted in our office. This being an extensive and aggravated case of pericementosis. Patient has not been so free from facial neuralgia for years.

To sum up, any irritation of the millions of nerve fibrillæ in the teeth and exposed necks of teeth is amply sufficient to start an inflammation (if it be inflammation, as I think it is) extending along the course of the nerves to the larger trunks, where the blood vessels of the nerve sheaths are proportionately large, and may also extend through the ganglion to the sympathetic system.

This paper could be continued indefinitely, with its minutiæ, but I merely wish to start the ball rolling on this very important though much neglected subject, of which we see little or no writing in the dental journals, and which is the weak point in the education of our medical brothers.

Since this paper was written I hear there was an article or two on neuralgia recently in the dental journals.

The Dental Cosmos for August, 1896.

"SURGERY OF THE MAXILLARY SINUS," by Dr. J. D. Patterson, Kansas City. Read before the Interstate Dental Meeting at Excelsior Springs, Mo., June 23-26, 1896. On account of contiguity of the sinus to the superior molar roots, disease of these latter often extends to the antrum. Diseases of these teeth are too often treated without investigating the antrum, especially in obstinate and chronic cases. The treatment of diseases of this cavity has not been properly taught, so that the ordinary practitioner is not at all skilled in their diagnosis. The utmost skill is often demanded in making a correct diagnosis. The symptoms are often obscure and deceptive. When from a diseased tooth the diagnosis is often simple, but from other causes is more obscure. When the teeth are not affected the symptoms are often similar to, and are often mistaken for, a severe coryza. The teeth do not respond and there is no redness or swelling. The most ordinary and evident signs are not present. Sometimes an electric lamp in the mouth will show through the antrum and cheek, but even the translucency cannot be depended upon. The new X rays may prove valuable in diagnosing diseases of this kind. When the usual symptoms are present—heat, swelling, distention, etc.—and are plain, there is sufficient ground for operating. The diseased tooth should be ex-

tracted, and this alone will often effect a cure. When chronic, however, this will not be sufficient. The antrum must then be opened, and there has been much dispute as to the proper place for performing this operation. I have found that the best place generally is the lowest level of the space formed by the triangle of the three roots of the upper first molar. First sterilize your instruments in resorcin or cassia water. All instruments and surroundings must be aseptic. The engine makes such work much easier and more rapid nowadays. The trephine shown should be first used, with little pressure, as it will progress rapidly. When the cavity is reached a flow of diseased matter will come. After this is well evacuated follow with the larger instruments until you can insert the little finger and explore all parts of the cavity and see as much of it as possible. Wash with antiseptic liquids and dress as may be necessary, with water at 100°, with a pinch of salt to allay pain, which it will do. Tumors and growths must be removed with curets. These are difficult to treat, but can be removed successfully and a cure effected (as described in a case given). It may be safely said that even malignant growths may be removed and a cure effected if taken soon enough. Complete bony walls isolate the growth, and a perfect cure can be attained by their removal if taken before the bone has become affected.

"A So-called Abnormal Form of the Jaw," by Mr. Wilson, Lexington, Mo. Read before the same meeting. This is the form where the jaw protrudes so that the lower incisors close over on the outside of the upper teeth. In "Old Virginia" this is called "jimble-jaw." Jimble, being a folklore word, is not found in the dictionaries. The tribes east of the Baltic sea were called "Sterling." Those of the west were the Scandinavian stocks. The *Esterlings* emigrated from the Baltic to England and Wales. There were two main stocks of people in Europe—the Cimbrians of the north, who were a light, tall race; and in the south the short, dark people. The Cimbrians, or *Kimberlings*, of the north had the protruding jaw. It was an essential feature of the Kimberlings, and the antique skulls of the north often show it. The Kimberlings were a fierce and warlike people, and the jaw was closed with the determination of an energetic and aggressive character. They had an elongated face, and helmets are found made to fit such a face and the protrusive jaw.

They were jimble-jawed men. This form of jaw has also much to do with the origin of certain sounds in our language, as it led to the protrusion of the tongue beyond the upper incisors in speaking some words. The Romans depicted these people with protruding tongues in derision. The protruding jaw came from the early eating of horse flesh and other tough kinds of food. The horse was then used for food only, and this employment of horse flesh survives to-day only in France and Belgium. This form of jaw decreased on account of softer food due to cooking and other effects of civilization. The intermarriage of the two kinds of people produced a mixed stock in America. The jimble-jaw is more common in the southern United States than in the north, where the folklore is never heard. But in the south the jimber or kimber-jaw is common.

THE USE OF ROENTGEN RAYS.—The man Montague who swallowed his denture while in prison at Dundee, has at last got rid of his unwelcome intruder. His stomach was photographed by Roentgen light on an 18 by 14 inch plate, with an exposure of one and a half hours. A faint negative was the result, showing something like a set of teeth above the stomach. It was blurred and in duplicate, but this was supposed to be due to the man's motion in breathing, and also to the plate having shifted its position. A careful examination of the stomach was performed with no result, but the plate was afterwards found in the intestine and released. We wonder if the faint image on the negative was that of the teeth, or whether the dentine had again changed its position, as the operation was performed twenty-four hours after the photograph was taken. In the case of a vulcanite denture only the teeth and clasps would cast a shadow, the plate being transparent to the rays.—*Brit. Jour. Dent. Sc.*

DEATH THREE DAYS AFTER CHLOROFORM ADMINISTRATION.—The report of a case reaches us from Germany of a patient who died from the effects of chloroform used as an anesthetic for the removal of fourteen stumps. About seventy cubic centimeters were administered, and the patient vomited many times after the anesthesia. On the next day the vomiting persisted and there was slight jaundice. The pulse began to be accelerated, and on the following day the urine contained albumen. On the next day the patient became restless, and the pulse rapidly increased in frequency. The pupils were widely dilated. On the third day death supervened. At the necropsy there was recent fatty degeneration of the heart, liver and both kidneys. This, of course, was a case in which chloroform should on no account have been employed; in fact, we heartily condemn its use in dental practice altogether. The fatality differs from the ordinary run inasmuch as the chloroform narcosis was not immediately fatal.—*Brit. Jour. Dent. Sc.*

Letters.

ANSWER TO DR. BAILEY.

LE MARS, Iowa, September 25, 1896.

To the Editor of the Digest,

MR. EDITOR:—In the August DIGEST Dr. Bailey, of Wisconsin, relates his experience with sodium peroxid and asks what the trouble is. My advice to Dr. Bailey would be this: Be careful not to get the peroxid through the end of the root and then you will have no further trouble. Yours,

E. D. BROWER.

NEW YORK LETTER.

NEW YORK, September 26, 1896.

To the Editor of the Digest,

MR. EDITOR:—This clipping is from a New York paper:

"Used Chloroform and Gas.—Charles S. Ives, a dentist, 70 years old, committed suicide at his home, No. 62 West Thirty-fifth street, yesterday morning. His business is said to have been good and the only reason that can be assigned for his act is that he was suffering from insomnia." It is a sad thing to chronicle the tragic termination of a life so familiar among dentists for the last thirty-five years as was Dr. Ives'.

Magazines and newspapers are keeping abreast of the times, and dental journals must follow suit if they expect the thousands of dentists who do not belong to societies to read them. There are reasons why our gatherings are losing their attractiveness, and smart will be the body of men that devises a remedy. Old lines are not going to satisfy.

The New Jersey Central opened the season at Newark with these questions: Whose amalgam do you consider the best? And do you squeeze the amalgam before placing in the cavity? It will be interesting to see the answers, for the questions are important. For a long time we believed the harder the squeeze the better, but we have gone directly the other way during the last two years and are better

satisfied. Another thing we have learned is, that perfect amalgamation of the mass is a very important item. Amalgams are coming more and more into use by the better class of practitioners, and this argues for a better kind of practice.

Dr. Cravens is out in the August DIGEST on a change of treatment for Riggs' disease from "hot water." That was a "sure cure," so why change to diluted sulphuric acid? We don't use anything in the pockets and we get all the results that are being claimed except this—we do not claim that like conditions will not again bring diseased action. Dr. Cravens says this disease is not hereditary, but is dependent upon a weakened condition of the surrounding tissues, just as other diseases are upon weak lungs. Yes, but how are the lungs, etc., weakened? Are they not an heritage?

This is what we have claimed for a long time—that because of these tendencies to weakness the transmutation is made possible. We do not see any way of getting behind the truth of this reasoning. Men who claim that they always get "absolute cures" are simply mouthing it. There is nothing scientific in such claims, even with lactic acid. Let it be said that these tendencies are what permit disease; we all have them in a greater or less degree.

Dr. Rhein, in his paper and record of cases before the Odontological Society, proves these views in relation to tendencies or weakness. Just in proportion to these weakened conditions of tissues, either by pressure unduly applied or by uncleanly associations, the process of inflammation will be accelerated. Also, by the changing of these there will be a proportionate return to health. This is termed an arrest of the inflammatory process.

If there be other weakened conditions of tissues, which lead to the local disturbance of the tissues about the teeth, then we advocate the need of constitutional aids to fortify them. We must recognize that there may be combined conditions of weakness that make manifest the more aggravated local expressions of disorder. A broad view must be taken of this prevalent disorder, with its multitude of phases, so that we can arrive at intelligent conclusions.

We notice that "we can demonstrate that nitrate of silver does penetrate the tissues of the teeth." Professor Harlan says not.

We also notice, in the September *Review*, that "*The Odontographic Journal* very much resembles the *International Dental Journal* nowadays, especially the color of the cover, type, etc. It is sprightlier

and has more science in it than its neighbor." But we do not see the significance or reason of these remarks.

November is to be an important month, but which way things are going no one seems wise enough to know. Many do not care, so long as business improves.

Cordially, NEW YORK.

INCORPORATION OF ASSOCIATION OF DENTAL EXAMINERS.

WASHINGTON, D. C., September 27, 1896.

Editor of the Dental Digest,

DEAR DOCTOR:—I send you a clipping from one of our daily papers, the *Evening Star*, of September 12, 1896, which briefly tells of a matter which is of some interest to the profession:

"The National Association of Dental Examiners was incorporated here to-day by articles filed by Henry B. Noble, Williams Donnally and Mark F. Finley. The purpose and object of the association are stated to be the securing, through the operation of the dental examining boards of the states, a high and uniform standard of qualification for dental practitioners, and uniformity of method in the conduct, operation and workings of said boards, and uniformity in the legislation of the several states creating the same or governing their conduct and operation. The association is to consist of the one here and such other boards of the several states and District of Columbia as may elect to join it and subscribe to the constitution and by-laws hereafter to be adopted by it."

This action was taken by direction of the National Association of Dental Examiners at its recent meeting at Saratoga.

Very truly, M. F. FINLEY.

DEATH FROM DRINKING CHLOROFORM.—An inquest was held in the Meath Hospital last week on the body of a woman aged 30. It appeared from the evidence that deceased had taken half an ounce of chloroform to relieve neuralgia. She seems to have had no difficulty in obtaining the drug, which was supplied from the chemist without any precautions. Both the coroner and the jury expressed an opinion that the sale of chloroform promiscuously, without a doctor's order, is dangerous and ought to be discouraged. And there, we suppose, the matter will remain.—*Brit. Jour. Dent. Sc.*

The Dental Digest.

PUBLISHED THE

TWENTY-EIGHTH DAY OF EVERY MONTH.

Editorial.

REPORT OF THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

We publish this month a part of the report of the National Association of Dental Examiners at the recent meeting at Saratoga. We think this report will be read and studied with interest by every dentist having the interests of his profession at heart. This association is the great governing body of the dental profession, and it possesses the authority and power to say what standard the dentists and the colleges shall live up to. We will discuss its workings fully when the publishing of the report is completed.

THE DENTAL COLLEGES AND THE FACULTIES' ASSOCIATION.

In this issue will be found a report of the College Faculties' Association. From this report we learn that the requirements for entrance after this year will be increased and a better general education required.

It must be a source of gratification to the profession generally to know that a more diversified education will hereafter characterize the graduates, as it is sure to make an improvement in the character of the profession as to culture, and more especially since it will bring into the profession those who have learned to think. There are too many in the world to-day who have gone through life without thinking of what they are doing and have done, and the habit of thinking is a requirement for a good dentist as much as for any other occupation.

From this report we also learn that there are fifty-three colleges in the United States, not all of which are in the association, but

those outside have made application for admission. No doubt it is best that all reputable colleges should be in the association with some agreed upon regulations.

We predict that before the profession grows much older requirements will be insisted upon that will include natural qualfications, which practitioners of dentistry must have to make a great success. We mean by this the mechanical tendency or qualification, without which education cannot make a successful practitioner.

We should think that the size of the classes would be smaller, as colleges are now organized in the different parts of the country, but the great good will come from getting better prepared practitioners. This question of better qualifications is not new and is being agitated all the time.

We see that a new feature is proposed—that of academic gowns and caps for Commencement day. Also the selecting of a color. We see that the committee reports favorably on lilac. Now lilac is a very beautiful color, but would it not be more appropriate to "paint it red"?

On the whole we wish to congratulate the College Faculties' Association for being so well organized and for doing such good work. We can scarcely imagine what the educational system of the dental profession would be if it were not for the National Association of Dental Faculties as a controller.

Notices.

A NEW SOCIETY.

On July 11, 1896, a new dental society was formally organized in Washington, D. C., to be called the "Odontological Society," the membership in which is confined exclusively to the faculty and graduates of the Dental Department of the National University.

AMERICAN DENTAL ASSOCIATION.

The following officers were elected at the recent meeting of the American Dental Association at Saratoga, N. Y.: President, James Truman, of Philadelphia; First Vice-President, Thomas Fillebrown, of Boston; Second Vice-President, W. R. Clifton, of Waco, Tex.; Recording Secretary, George H. Cushing, of Chicago; Corresponding Secretary, Emma Eames Chase, of

St. Louis, Mo.; Treasurer, Henry W. Morgan, of Nashville; Executive Committee, S. G. Perry, of New York; W. W. Walker, of New York, and A. O. Hunt, of Chicago.

The next meeting will be held at Old Point Comfort, Va., immediately after the meeting of the Southern Dental Association.

NATIONAL SCHOOL OF DENTAL TECHNICS.

The following officers were elected for 1896-7: President, Henry W. Morgan, of Nashville, Tenn.; Vice-President, S. H. Guilford, of Philadelphia; Secretary and Treasurer, J. F. Stephan, of Cleveland; Executive Committee, D. M. Cattell, N. S. Hoff and George H. Wilson.

PROCEEDINGS OF THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS,

INCORPORATED AT WASHINGTON, D. C., SEPTEMBER 10, 1896.

The thirteenth annual session of the National Association of Dental Examiners was called to order at 10:30 a. m., Monday, August 3, 1896, at Saratoga Springs, N. Y., President J. T. Abbott presiding, Williams Donnally, secretary pro tem.

On the roll-call of states the following were represented:

Alabama	T. P. Whitby	Selma
	J. A. Hall	Collinsville
District of Columbia	H. B. Noble	Washington
	Williams Donnally	"
	M. F. Finley	"
Nebraska	G. S. Nason	Omaha
Iowa	J. T. Abbott	Manchester
Virginia	J. Hall Moore	Richmond
Georgia	A. G. Bouton	Savannah

On second roll-call of states by the secretary the following responded:

Alabama	T. P. Whitby	Selma
	J. A. Hall	Collinsville
Arkansas	No response.	
California	No response.	
Colorado	No response.	
Connecticut	George L. Parmele	Hartford
Delaware	No response.	
District of Columbia	M. F. Finley	Washington
	Williams Donnally	"
	H. B. Noble	"
Florida	No response.	

Georgia	A. G. Bouton	Savannah
Illinois	A. W. Harlan	Chicago
Iowa	J. T. Abbott	Manchester
Kansas	No response.	
Kentucky	No response.	
Maine	No response.	
Maryland	No response.	
Massachusetts	No response.	
Mississippi	No response.	
Michigan	No response.	
Nebraska	George S. Nason	Omaha
New Hampshire	No response.	
New Jersey	F. C. Barlow	Jersey City
	G. Carleton Brown	Elizabeth
	George E. Adams	South Orange
	Charles A. Meeker	Newark
New York	No response.	
North Dakota	No response.	
North Carolina	No response.	
South Carolina	No response.	
Ohio	F. H. Lyder	Akron
Oklahoma	No response.	
Pennsylvania	No response.	
Rhode Island	C. A. Brackett	Newport
Tennessee	No response.	
Virginia	J. Hall Moore	Richmond
Vermont	No response.	
West Virginia	No response.	
Wisconsin	Charles C. Chittenden	Madison

On motion the reading of the minutes of 1895 was suspended, they being already published and distributed.

The secretary presented the reports of the secretaries of the different state examining boards, as per resolution of August 7, 1895, presented by Dr. Barlow.

The reports were received, and on motion a committee of two was appointed by the chair to tabulate the same and report to the association.

The president appointed C. A. Brackett, Newport, R. I., H. B. Noble, Washington, D. C.

Howard University, of Washington, D. C., made application for recognition to the association; referred to the committee on colleges.

Nebraska board made application for membership, with fee of $5.00 accompanying.

The treasurer's report was read, as follows:

Cash receipts	$110.00
Cash expenditures	65.81
Cash balance	$ 44.19

State boards owing the annual dues for Proceedings of '95:

California,	Mississippi,	Vermont,
Colorado,	North Dakota,	West Virginia.
Michigan,	Oklahoma,	

T. P. Whitby and G. S. Nason were appointed a committee to audit the accounts, and reported the same as correct.

Secretary requested a resolution to procure a copy of Polk's 1896 Dental Directory of the United States. Passed.

Secretary requested resolution for appointment of a committee on the death of the late Dr. W. E. Magill.

Drs. A. W. Harlan and L. Ashley Faught were appointed by the president.

The president read some brief remarks, with suggestions, as follows:

Gentlemen of The National Dental Association:

Again we are permitted by a kind Providence to meet in annual session as a deliberative body to discuss questions of importance to ourselves, to state boards, dental colleges, practitioners of dentistry, and patrons. I believe we have not as yet fully comprehended the scope of our mission.

When this body was organized its promoters were alive to the necessity of such a body, and like all other educative associations we must learn by experience. The College Faculties' Association was not fully in accord at first with us or we with it, and we did not fully understand each other the first, second, or third year. The fourth year was one of inquiry, and not until our last meeting here in Saratoga did we come to a full understanding of the province of each organization; then there was a comprehension of the duties, aims, significance of each. Since that point was reached, each organization has put forth its efforts for the good of all concerned.

One vital point of progression has been attained, viz., the requirement of a better education for matriculates in colleges. The reputable colleges have constantly labored toward this higher attainment. Another point is length of time required to graduate students, three sessions of at least six months each, and the constantly increased requirements of the students, and to accomplish this the professors have been fitting themselves, each in his special department, to impart all knowledge extant to the student.

From crude and experimental beginnings the National Association of Dental Examiners has arrived at a point of prime importance in this educational process. We noticed recently that some of the college announcements place much stress upon the fact that they have been recognized as reputable

schools by the National Association of Dental Examiners. And as this fact comes back to us it is our duty to deliberate carefully and see to it that no unworthy, incompetent school is recognized by this body. It is our duty to *know* the status of every institution asking admission to the class of regular schools. We owe this to ourselves, as we cannot plead ignorance. We owe it in an eminent degree to the present recognized schools. We live in an age of progress and cannot go backward. Our profession has been called a specialty. If it be a specialty, we have specialties within our specialty, and doubtless the time will come when these specialties will be better recognized.

At our last meeting at Asbury Park Dr. Jack, of Philadelphia, as chairman of committee on colleges, made a very clear and comprehensive report. Some weeks after adjournment Dr. Jack sent to our secretary, Dr. Meeker, his resignation as chairman of said committee. We urged him to reconsider his decision, but he insisted that it was final, which we very much regretted because of his knowledge of the subject, gained by much labor and at the expense of valuable time and money. We appointed to that position Dr. W. E. Magill, of Erie, Pa., who entered upon his duties with energy and had accomplished much when he was taken sick and left us for his long home. A good man has been taken from us. It is not the proper place to say more on this subject, so I would recommend a committee be appointed to draft suitable resolutions. Then we appointed your ex-president, Dr. L. Ashley Faught, of Philadelphia, to take up the matter where left by Dr. Magill's unfortunate demise. We feel under many obligations to Dr. Faught for the work he has done, being hampered as he was by taking the position at so late a date, but I am sure his whole soul has been in the work and we will find in his report matter for careful deliberation.

One other point to which I would call your attention. There are several incompetent, so-called dental colleges. It were well for this body to devise some means to counteract their work. It may be well for a committee of college faculties and the National Board of Dental Examiners to devise some means to counteract them. As the reputable colleges have increased, the usual result follow—counterfeits. They are easy to detect, but not easy to suppress, especially if we have a Chicago judge to interpret the law. Advocates of examination for all, regardless of diplomas, would tell us they have the remedy. All laws, however, are not in accord with that theory and we have to deal with what *is*. We will have a report of the committee on codifying what rules we have and can then better determine "where we are at." I call your attention to resolution on page 18, last report, "Boards of each State scrutinizing schools formed in their jurisdiction," and suggest under this head the roll-call of states and response from each state board present.

Perhaps my suggestions are too numerous, as we will have plenty of points for discussion when you hear from the committees.

The following resolution, offered by Dr. Barlow, was adopted:

Resolved, That this association request the National Association of Dental Faculties to enact a rule prohibiting colleges in their membership from receiving beneficiary students recommended by state boards and associations.

The following resolution, offered by Dr. G. Carleton Brown, was adopted:

Resolved, That boards of examiners, members of this association, be hereafter prohibited from recommending students to colleges for beneficiary or free scholarships.

Adjourned until 3 p. m.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The thirteenth annual meeting of the National Association of Dental Faculties was held at the Grand Union Hotel, Saratoga Springs, commencing August 1, 1896.

The following colleges were represented:

Birmingham Dental College—T. M. Allen.

University of Denver, Dental Department—W. E. Griswold.

Columbian University, Dental Department—H. C. Thompson.

National University, Dental Department—J. Roland Walton.

Atlanta Dental College—William Crenshaw.

Southern Medical College, Dental Department—Frank Holland.

Chicago College of Dental Surgery—T. W. Brophy and Louis Ottofy.

Northwestern College of Dental Surgery—L. L. Davis.

Northwestern University Dental School—Theo. Menges and George H. Cushing.

Indiana Dental College—G. E. Hunt.

Louisville College of Dentistry—Francis Peabody.

Baltimore College of Dental Surgery—B. Holly Smith.

University of Maryland, Dental Department—F. J. S. Gorgas.

Boston Dental College—J. A. Follett.

Harvard University, Dental Department—Thos. Fillebrown.

University of Michigan, Dental Department—J. Taft.

Detroit College of Medicine, Dental Department—G. S. Shattuck.

University of Minnesota, College of Dentistry—Thos. E. Weeks.

Kansas City Dental College—J. D. Patterson.

Western Dental College—D. J. McMillen.

Missouri Dental College—A. H. Fuller.

University of Buffalo, Dental Department—W. C. Barrett.

New York College of Dentistry—Frank Abbott.

Cincinnati College of Dental Surgery—W. T. McLean.

Ohio College of Dental Surgery—H. A. Smith.

Cleveland University of Medicine and Surgery, Dental Department—S. B. Dewey.

Western Reserve University, Dental Department—H. L. Ambler.

Pennsylvania College of Dental Surgery—C. N. Peirce.

Philadelphia Dental College—T. C. Stellwagen and S. H. Guilford.

University of Pennsylvania, Dental Department—E. C. Kirk.

University of Tennessee, Dental Department—J. P. Gray.

Vanderbilt University, Dental Department—H. W. Morgan and W. H. Morgan.

University College of Medicine, Dental Department—L. M. Cowardin.

Royal College of Dental Surgeons of Ontario—J. B. Willmott.

The following colleges were elected to membership:

Howard University, Dental Department, Washington, D.C.—James B. Hodgkin.

Marion Sims College of Medicine, Dental Department, St. Louis, Mo.—J. H. Kennerly.

Dental Department of Tennessee Medical College, Knoxville, Tenn.—R. N. Kesterson.

The following applications for membership were reported favorably by the Executive Committee for final action next year:

University of Omaha, Dental Department, Omaha, Neb.; Ohio Medical University, Dental Department, Columbus, O.; Baltimore Medical College, Dental Department, Baltimore, Md.; Dental Department of Milwaukee Medical College, Milwaukee, Wis.

The New York Dental School announced its intention to complete its application next year.

The report of the secretary stated that there were in the United States fifty-three institutions teaching dentistry or conferring the dental degree, as follows: Dental schools in active operation, forty-six; organized during the year, two; in course of organization, one; corporations conferring the dental degree, four. Of the dental colleges, thirty-six were now members of the association, eight had

PRELIMINARY.

2 terms Orthography, standing.
2 terms Reading, standing.
2 terms Writing.
2 terms Arithmetic.
2 terms Geography.
2 terms Grammar.
2 terms History U. S.

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These are required in all cases and fourteen counts given for the same.

ELECTIVE.

3 terms University Algebra, through Quadratics.
3 terms Geometry, plane and solid.
2 terms Physiology.
2 terms Physical Geography.
1 term Botany, with analysis of forty plants.
3 terms General History.
3 terms Natural Philosophy.
3 terms English Literature.
2 terms Civil Government.
2 terms Rhetoric.
2 terms History of England.
3 terms American Literature.
3 terms Chemistry.
1 term Commercial Arithmetic.
2 terms Astronomy.
2 terms Geology.
2 terms Natural History.
1 term Political Economy.
2 terms Drawing.
3 terms German.
3 terms Greek.
3 terms Latin Reader, Cæsar.
3 terms Cicero, four orations.
3 terms Virgil, six books.
1 term Bookkeeping.
3 terms French.
2 terms Manual Training.

(After session of 1901-1902 U. S. History becomes elective and entitles to two credits.)

FOR THE SESSION OF 1897-98.

Preliminary	14 counts.
Elective	18 counts.
Total	32

FOR THE SESSION OF 1898-99, 1899-1900.

Preliminary	14 counts.
Elective	27 counts.
Total	41

FOR THE SESSION OF 1900-01.

Preliminary	14 counts.
Elective	36 counts.
Total	50

For the session 1901-1902 and thereafter no preliminary credits; forty-eight credits from the studies classed as elective.

When the text-book mentioned has not been completed, the exact amount of work done should be stated.

The candidate above named is recommended as of good moral character, studious habits, and, judging from the past records, able to carry forward the work of a dental college course.

applications for membership pending, two had signified their intention of applying, and the two newly organized have announced in their catalogues their intention to comply with the rules of the association.

The report of the Committee on Schools, presented by its chairman, Dr. Follett, stated that reports had been received from thirty-five schools as to their equipment under the resolution adopted last year. These reports showed that the schools were well provided with lecture-rooms, and in most instances with ample laboratory and dispensary accommodations, with sufficient and appropriate appliances. They indicate a broadening in the general course of instruction, as well as fuller courses in all departments. Several colleges have recently added courses in bacteriology and extended their work in histology and pathology in practical ways. During the year 1895-1896 the number of matriculates at the thirty-five colleges reporting was 5,532; graduates, 1,363.

Mr. Melville Dewey, secretary of the Board of Regents of the University of New York, appeared before the association by invitation of some of the members, and gave a masterly address on the needs of the movement for higher education in professional ranks. Incidentally, Mr. Dewey explained some of the details of the system pursued in New York, and stated that, greatly to the surprise of those in charge of the various professional educational institutions in the state, the number of students had steadily increased since the higher requirements had been put into force by the Board of Regents.

Among the more important legislation enacted by the association were the following:

REGULATING THE ADMISSION OF STUDENTS.

Preliminary Examination.

The following preliminary examination shall be required of students seeking admission to colleges of this association:

———— High School, ————, 189

To the Faculty of————

M—— ———— desires to present ——self as a candidate for admission to the Course of Dentistry, —— ——

He has pursued in this school the branches against which numbers appear—the numbers being the standard upon a scale of 100. Our course requires five recitations or exercises, weekly, in each branch. Our terms are ten weeks in length.

A student who is suspended or expelled for cause from any college of this association shall not be received by any other college during that current session. In case the action of the first college is expulsion, the student shall not be given credit at any time for the course from which he was expelled. Any college suspending any student shall at once notify all other members of this association of its action.

APPLICATIONS FOR MEMBERSHIP.

Applications for membership in this association shall be made in writing, favorably indorsed by the faculties of two or more colleges of the association and the board of dental examiners of the state in which it is located.

Such application shall then be referred to a special committee of three which shall be appointed by the chair upon each application. The duty of this committee shall be to visit the school applying during its session, personally examine its facilities for teaching, methods of instruction and efficiency of the faculty, and report to the Executive Committee, which report shall, if favorable, be acted upon.

Each application shall be accompanied by a sum of money sufficient to defray the expenses of the special committee.

The constitution was so amended that hereafter it will require a two-thirds vote instead of a majority to elect new members.

The following resolution, offered by Dr. Peirce, was on motion adopted:

WHEREAS, In view of various reports frequently being circulated derogatory to the character of certain schools without any one being willing to prefer charges sustaining such statements,

Resolved, That the Executive Committee be and is hereby authorized to exercise full power to investigate all such innuendoes or charges by visiting the school or schools, or authorize some one to perform this duty; summoning witnesses, etc., in order that all such statements shall be sustained or proven false.

Resolved, That a sum to be determined by the officers, president, secretary and treasurer, be and is hereby appropriated for the purpose of paying expenses essential to the carrying out of the provisions of the above resolution.

The following communication from the National Association of Dental Examiners was read and on motion adopted:

Resolved, That this association requests the National Association of Dental Faculties to enact a rule prohibiting colleges from receiving beneficiary students recommended by state boards and associations.

The following, offered by Dr. Abbott, was adopted:

Resolved, That the committee of three appointed by the chair to report on applications for membership shall determine and report to this association at its next meeting the minimum requirements of such colleges as desire to

The rules for the admission of students take effect with the session of 1897-8.

—— —— Principal.

ADMISSION TO ADVANCED GRADES ON CERTIFICATES.

The colleges of this association may receive into the advanced grades of Juniors and Seniors only such students as hold certificates of having passed examinations in the studies of the freshman or junior grades respectively, such certificates to be pledges to any college of the association to whom the holders may apply that the requisite number of terms have been spent in the institutions by which the certificates were issued.

INTERMEDIATE CERTIFICATE.

Place—— Date——

This certifies that —————— has been a member of the ———————— class in the ———————— during the term of ————————————

He was examined at the close of the term in the required studies, as stated herein, and is entitled to enter the

Freshman Year.	Junior Year.
[List of Studies.]	[List of Studies.]

This certificate shall by correspondence be verified by the dean of the college by which it was issued. Without such certificate no student shall be received by any college of this association for admission to the advanced grade, except on such conditions as would have been imposed by the original school, and these to be ascertained by conference with the school whence he came.

LIMITING THE TIME FOR THE RECEPTION OF STUDENTS.

No member of this association shall give credit for a full course to students admitted later than ten days after the opening day of the session, as published in the announcement.

In case one is prevented by sickness, properly certified by a reputable practicing physician, from complying with the foregoing rule, the time of admission shall not be later than twenty days from the opening day.

It cases where a regularly matriculated student, on account of illness, financial conditions, or other sufficient causes, abandons his studies for a time, he may re-enter his college at the same or subsequent session; or where under similar circumstances he may desire to enter another college, then with the consent of both deans he may be transferred; but in neither case shall he receive credit for a full year unless he has attended not less than seventy-five (75) per cent of a six months' course of lectures.

ATTENDANCE, EXAMINATIONS.

Attendance upon three full courses of not less than six months each in separate academic years shall be required before examination for graduation. The year shall be understood to commence August 1, and end the following July 31.

Beginning with the session of 1896-1897, the examinations conducted by the colleges of this association shall be in the English language only.

become members of this association as to length of course, plant, equipment, facilities for teaching and the number and efficiency of its faculty.

Dr. Brophy offered the following, which was adopted:

Resolved, That a graduate of a recognized dental college, who applies to a college of this association for the degree of Doctor of Dental Surgery or Doctor of Dental Medicine, shall complete one full course of instruction in said college and comply with all other requirements of the senior class.

The following, offered by Dr. Barrett, lie over till next year for final action:

Resolved, That after the regular session of 1897-98 the annual college term for the members of this association shall be seven full months.

Resolved, That it is advisable that the National Association of Dental Faculties in future meet in connection with the National School of Dental Technics at a time of year when the colleges are in session and before the time for the issuance of the annual catalogues.

A committee, consisting of Drs. Patterson, H. W. Morgan, and Kirk, appointed to consider the advisability of adopting the academic cap and gown for Commencement day, reported in favor of adopting the intercollegiate system and in favor of lilac as the distinguishing color for dental schools. Laid over till next year.

The following were elected officers for the ensuing year: J. P. Gray, Nashville, Tenn., president; Truman W. Brophy, Chicago, vice-president; Louis Ottofy, Chicago, secretary; Henry W. Morgan, Nashville, Tenn., treasurer; J. Taft, Cincinnati, Thomas Fillebrown, Boston, and B. Holly Smith, Baltimore, Md., executive committee; H. A. Smith, Cincinnati, Thomas E. Weeks, Minneapolis, and J. D. Patterson, Kansas City, Mo., *ad interim* committee.

The newly elected officers were installed, and the president announced the standing committee as follows: S. H. Guilford, Philadelphia, Pa., J. B. Willmot, Toronto (Canada), Theodore Menges, Chicago, Ill., L. M. Cowardin, Richmond, Va., and James Truman, Philadelphia, Pa., committee on text-books; J. A. Follett, Boston, Mass., G. E. Hunt, Indianapolis, Ind., C. N. Peirce, Philadelphia, Pa., A. H. Fuller, St. Louis, Mo., and D. J. McMillen, Kansas City, Mo., committee on schools.

Adjourned.

ETHER COLLAPSE.—One part of camphor to ten parts of olive oil, used hypodermically, is effective in ether collapse. One grain of camphor may be given.—*Medical Record.*

News Summary.

ANTIQUITY OF THE TRUSS.—Poncet has an interesting historic sketch of the evolution of hernial bandages in *Med. Moderne*, No. 11, with a description of a recently discovered ancient Phenician statuette of a god, at least 3,000 years old, which represents "unmistakably" several ruptures on the abdomen, with a double hernial bandage resembling those now in use.—*Centralblatt f. Chirurgie*, April 11.

CADAVER.—"What is the origin of the word 'cadaver'?" An abbot, about 1216, conceived himself an etymologist, and as a specimen of his powers left us the word "cadaver," a corpse, thus dissected: "Ca," quoth he, is abbreviated for caro; "da," for data; "ver" for vermibus. Hence we have "caro data vermibus," flesh given to the worms. Yet this hardly applies to the cadaver to-day in the dissecting-room.—*Dominion Dental Journal.*

SLOBBERING.—Dr. Sauchez de Silvera, we learn from *La Sperimentale*, has not thought this homely subject unworthy of study, and he has written an essay upon it. From the observations of Dr. Couetoux, of Nantes, and his own, he concludes that healthy infants never dribble; that infants who dribble only in the day time, though apparently in good health, have their digestive functions impaired; that infants who dribble at night are suffering from obstruction of nasal respiration to a greater or less degree; that these phenomena are altogether unconnected with dentition.—*Dental Register.*

TONGUE CONTRACTION IN HYSTEROEPILEPTICS.—Dr. Lafenauer concludes (*Med. Abstract*) that in hysterics typical contraction of the tongue can be produced either during the waking or the hypnotic state by stimulation of the acoustic nerve. These contractions are the result of a central reflex. They are also produced by the peripheric passage from direct stimulation of the lingual muscles. Contraction of the tongue may be associated with contractions of the muscles of the face, neck, trunk or limbs. Induced contractions do not differ from those observed spontaneously in hysterics.

THE DENTIST'S IN SHAKESPEARE'S TIME.—An interesting letter from the the Bishop of Winchester to Mr. (afterward Sir) William More has lately been unearthed. It bears date August 19, 1572, and contains this interesting paragraph: "I doe remember that you tolde me of one whome you knewe being skillful in trimming and stopping of tethe, if you can cawse the same fellowe to come unto me aboute that purpose you shalle greatlie pleasure me." This certainly looks as though any skill in dental science was at that time a rarity, and that even the best of operators were held so low in esteem that the term "fellowe" was thought good enough by way of description for them.—*Brit. Jour. Dent. Sc.*

WHAT NATIONS EAT.—A statistician compiled the following figures, showing the cost of nourishment for the various nations: The average Englishman consumes $250 worth of food per year; Germans and Austrians, $216 worth;

Frenchmen, $212; Italians, $110, and Russians only $96 worth. In the consumption of meat the English-speaking nations are also in the lead, with 128 pounds a year per capita of the population; the French using 95 pounds; Austrians, 79; Germans, 72; Italians, 52; Russians, 50. The consumption of bread is reversed, as compared with meat. The English use 410 pounds a year; the French, 595; the Austrians, 605; Germans, 620; Spanish, 640; Italians, 660; Russians, 725.—*The Sanitarian.*

AN ELECTRIC HÆMOSTAT.—Mr. Lawson Tait has just added to his list of valuable contributions to surgery. His latest invention is an electric hæmostat, an instrument in which a current of electricity is utilized for the arrest of bleeding. The fact of the coagulation of albuminous tissues at 180 Fahrenheit has made this instrument possible, and it takes the form of a platinum wire enclosed in a pair of forceps, the wire being insulated in burned pipe-clay. When an artery is seized by these forceps and the current turned on further bleeding is prevented by the agglutination of the walls of the artery, which effectually prevents a further flow of blood. This invention has succeeded in a great number of cases.—*Brit. Jour. Dent. Sc.*

STUDY OF IRRUPTION OF THE TEETH INTO THE NASAL CHAMBERS.—Resume of reported cases and report of additional cases. Paper by Dr. A. W. MacCoy, Philadelphia, before American Laryngological Association. The writer gave a complete bibliography to date of this class of cases and related some of his own. Teeth in the nose may cause not only local irritation and purulent discharge but also reflex cough and laryngeal spasm. In one of his own cases, in the examination of the nostril in a case of sarcoma, the presence of a tooth in the nostril was accidentally discovered, and the question suggested itself as to whether such presence may not have been the exciting irritation which eventuated in malignant formation.—*Med. Record.*

OXYGENIZED CHLOROFORM.—Dr. Charles S. Elder (*Col. Med. Jour.*, June, 1896) says of the new anesthetic: Few patients are gotten completely under the anesthetic by this process. They seldom have perfect relaxation of muscles and loss of corneal reflex. To this first is to be attributed the rapid recoveries unattended by nausea and vomiting. It is not true that patients keep rosy lips and cheeks during the anesthesia any more than they do with chloroform, nor do they recover any better or quicker, provided the narcoses be of equal depth and duration. Chloroform, as ordinarily given, is a more powerful anesthetic than when given by the new process, therefore the anesthetic is apt to be more profound unless it is administered with more care. But to argue that oxygenized chloroform is safer for this reason is to insist that it is better because it is less efficient.

CHLOROFORM ANESTHESIA DANGEROUS TO MEAT-EATERS.—Some time ago Dr. Lauder Brunton called attention to the fact that death from chloroform anesthesia is probably due, not to the chloroform itself, but to the fact that chloroform arrests the elimination of tissue poisons, and that death is directly the result of the action of these poisons rather than of the chloroform. Dr. Brunton cited the fact that death from chloroform anesthesia is very rare in India, while it is becoming more and more common in England, which fact

he attributes to the increasing use of meat as an article of diet in Great Britain. Chloroform has long been a popular anesthetic in Edinburgh, but recently deaths from its use in that city have been very frequent. It is also noticed that gout is becoming very common. Both these circumstances are doubtless due to the increased consumption of meat resulting from the large importations of low-priced refrigerator meat.—*Modern Medicine.*

DIAGNOSIS OF SALIVARY STONES.—Lindemann relates an interesting case of a salivary stone observed in a woman of fifty years, who thought the neoplasm of a malignant nature. The tongue, especially in its left half, was enlarged and presented deep marks of the teeth and œdematous margins; the left sublingual salivary gland was also swollen and its surface was of a dark red color and covered with a network of sinuous veins; the tumor was decidedly hard and cartilaginous. The lymphatic glands of the chin were also quite swollen, the surrounding cellular tissue infiltrated and the skin reddened. She also complained of headache, sleeplessness, thirst, loss of appetite and great weakness; no elevation of temperature. The growth had gradually developed during six to eight months. A pseudo-neoplasm was suspected, and an incision exposed a salivary stone one centimeter in thickness and three in length; the concomitant symptoms then soon disappeared. The stone was unquestionably due to a deposit of lime-salt from the saliva, which element is present in large quantity in the saliva of certain subjects.—*Deutsche Medicinische Wochenschrift.*

CARBOLIC ACID.—In *The Polyclinic* Dr. Oscar H. Allis, of Philadelphia, has contributed an article worthy of widespread circulation. He says the use of carbolic acid in full strength upon the fresh tissues, raw surfaces, etc., causes the formation of a protective albuminate, a condition which renders further absorption impossible.

The same takes place when the strong acid is applied to a raw burned furface. It is not claimed that an aqueous dilution is safe when applied extensively to raw surfaces; on the contrary, the more dilute the more dangerous. In a case of washing out the thorax in the treatment of purulent pleurisy, the late Roger Keys, a most careful and judicious physician, came near losing a patient from absorption of the dilute acid.

"It will strike many of you with astonishment when I say that it would be safer to pour a gallon of pure carbolic acid into a purulent thoracic cavity than to pour in a gallon of water into which a single ounce of carbolic acid has been placed. I will go even further, and say that excess of the strong acid in a cavity such as an abscess cavity, or upon exposed tissues, as a burn or a fresh wound, does no harm, while excess of a dilute solution, if left in a cavity or used over an extensive raw surface, will be promptly followed by dangerous, if not fatal, toxic effects."

NEW METHOD OF ADMINISTERING CHLOROFORM.—M. Rosenberg contends that the dangers to both heart and respiration are occasioned reflexly by the irritating action of the chloroform on the terminations of the trigeminus distributed to the mucous membrane of the nose, that the same is true of any other anesthetic taken through the nose, and that this may be obviated

by first anesthetizing the mucous membrane of the nose by using cocain, which is an antidote to chloroform. Having tried this method in fifty cases, he concludes: 1. The commencement of anesthesia is less disagreeable for the patient, who never makes defensive movements. 2. The excitement stage is often wanting, and is always slight, except in cases of alcoholics. 3. During anesthesia it is very rarely a patient vomits, and if vomiting does occur, there is little retching. 4. Upon awakening the patient experiences no disagreeable sensation, and is not haunted by the smell of chloroform or ether. The method pursued is as follows: The patient is directed to blow his nose in order to clear the mucous membrane, then leaning forward or sitting (never lying), to snuff a centigram of powder consisting of 10 per cent of cocain hydrochlorat and some inert substance. Repeat in three minutes and commence general anesthesia. If the operation is prolonged, repeat chloroform continuously, drop by drop.—*Gazette des Hopitaux.*

TREATMENT OF ANTRUM DISEASE.—Dr. John E. Bacon describes his method of operation. It consists in cleansing and medicating the cavity through a small puncture in its inner wall in the inferior meatus of the nose, which can be made without general anesthesia and without pain. The instruments are a steel trocar and canula, two silver tubes, a silver wash tube, and a hard rubber syringe with rubber tube connections made to fit the canula and wash tubes. Cleanse the nares with the antiseptic spray, cocainize the inferior turbinal and floor on the side to be operated upon, insert a rubber operating speculum well into the nostril, and place the trocar beneath the inferior turbinal about one and one-fourth inches from the skin margin; by bending the septum to the opposite side the point of the trocar will point obliquely into the cavity of the antrum. A slight tap with a leaden or rawhide mallet will cause the trocar to penetrate the thin bone which constitutes the inner wall of the cavity. Care must be taken not to penetrate too deeply and so wound the opposite side of the antrum, as serious hemorrhage might result. In most cases the trocar can be pushed through the thin bony wall with the fingers alone, and this should be done, when possible, to avoid the mental shock which the blow with the mallet sometimes gives. The trocar may now be withdrawn, leaving the canula in place, and the rubber tube may be attached to the canula and the cavity syringed out with warm sterilized normal salt solution. The fluid will escape into the nose through the ostium maxillare and bring with it pus if any be present. After the cleansing, the trocar may be replaced and the nut removed, when the canula may be withdrawn over the trocar; now a silver tube is slipped over the trocar and the latter is withdrawn, leaving the silver tube in place, and this may remain as long as required without any irritation. This tube is exactly fitted by the silver wash tube, and the cleansing may be repeated without inconvenience. A solution of menthol and camphor in liquid albolene may be easily sprayed through the tube and aristol or other non-irritant powder may be blown into the antrum by the same means. It is imperative to thoroughly sterilize all instruments used, and to use only warm sterilized fluid in each case, to prevent infection.—*The Am. Therapist*, June, 1896.

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